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CANCER FACILITIES AND SERVICES; A REPORT FROM THE NATIONAL ADVISORY CANCER COUNCIL

In anticipation of the intensified effort in the field of cancer after the war, the Chairman of the National Advisory Cancer Council on November 18, 1944, appointed a committee composed of Dr. George M. Smith, Dr. Frank Adair, and Dr. Sherwood Moore, of the National Advisory Cancer Council, to report upon certain activities in this field. The Committee has had the assistance of the following consultants: Dr. Matthew H. Griswold, chief, Division of Cancer Research, Connecticut State Department of Health; Dr. Louis C. Kress, director of the State Institute for the Study of Malignant Diseases, Buffalo, N. Y.; Eleanor J. Macdonald, research statistician, Connecticut State Department of Health; Frances A. Macdonald, biometrician, Hartford, Conn.; Dr. R. R. Spencer, chief, and Ora Marshino, information specialist, National Cancer Institute, Bethesda, Md.

The activities studied fall under two main headings, medical education in cancer, and cancer-control programs. Since the data on medical education will be of interest to physicians and medical school administrators and the data on cancer-control programs will be of interest to all those concerned in providing adequate cancer services and facilities throughout the country, it has been decided to publish the report in order to make it available to everyone interested in the subject of cancer-control work.

The report is presented in four parts: Part I, Medical Education in Cancer; Part II, Basic Elements of a Cancer Program; Part III, Basic Information for Use in Studying and Planning State-Cancer-Control Activities, with Organization Charts as of 1945; and Part IV, Summary and Recommendations.

PART I. MEDICAL EDUCATION IN CANCER

UNDERGRADUATE EDUCATION

Letters inquiring as to the teaching of cancer and the place which this subject is given in the curriculum of medical schools, and asking for suggestions for improvement were sent to the deans of all Class A medical schools. Replies were received from 55 schools.

From these letters of inquiry, the Committee has received the impression that medical schools are interested in advancing the study of cancer as far as is compatible with the present-day curriculum. Under consideration are certain improvements in teaching, such as extension of the time devoted to the study of cancer subjects, development of clinical demonstrations, multiplication of interdepartmental conferences, and the institution of study of the results of treatment. These trends are encouraging. The Committee believes, however, that in general there is need for medical schools to give more comprehensive and better integrated courses in this subject.

At present, the teaching of cancer is largely confined to the separate courses

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in pathology, medicine and surgery, and radiation. Only two or three schools offer courses which combine the complete concept of the disease. Comprehensive courses are highly desirable. This would avoid some of the repetition which now exists because the subject is taught in separate departments, would provide ample time to cover the subject efficiently, and would give the student a better integrated picture of the cancer problem.

The treatment of the subject of pathology in most institutions is excellent, covering causes of the disease, the mechanisms, distribution of lesions, morphologic interpretations, and the study of post-mortem findings. However, pathology is only one phase of the problem; surgery and radiation are equally important; and the medical student must have thorough instruction in all three branches of medicine, if he is to have a comprehensive understanding of the problems involved in the diagnosis and treatment of this disease. Such instruction can be provided only through co-ordination of courses. Preferably, these courses should be given by the heads of the departments concerned, with suitable participation by specialists in the more restricted fields.

The subject is too broad to be under the control of any single division of the medical faculty. No one man can master the whole field of cancer or alone be capable of giving comprehensive instruction in cancer prevention, diagnosis, treatment, and aftercare.

The teaching of the clinical phases of cancer is probably being carried out fairly effectively in the cancer clinics as developed by the American College of Surgeons, where the departments of medicine, surgery, radiology, and pathology, with the indicated specialists, meet on common ground and make the diagnosis and outline the treatment of the cancer patient.

However, even the better-than-average interne frequently lacks an adequate understanding of malignant disease. This would seem to indicate that the medical-school curriculum does not provide adequate and comprehensive instruction in this subject.

The care of the terminal cancer patient is also little understood by the physician and tries his skill to the utmost. It is the aspect of the disease most neglected, both in the teaching and the practice of medicine. A more definite formulation of the instruction to be given in the care of such a patient is needed.

It is believed that the present undergraduate teaching of neoplastic disease, both in time and content, is not commensurate with the importance of the disease, which now ranks second as a cause of death in this country. It is recommended, therefore, that a conference of persons responsible for the planning and teaching of cancer courses in the medical school curriculum be held to consider means of improving this teaching.

POSTGRADUATE EDUCATION

MEDICAL SCHOOLS

In an effort to ascertain the extent of the present opportunities in medical schools for post-graduate training in the diagnosis and treatment of cancer, a questionnaire was sent to 68 class A medical schools, asking whether they were prepared to give such training to properly qualified physicians and requesting information concerning the length of the course and the training facilities. Replies were received from all but 2 schools. Thirty-one schools replied definitely that they were prepared, or would be prepared after the war to give special training in the diagnosis and treatment of cancer to properly qualified candidates. By "properly qualified candidates," the Committee means physicians who have completed an interneship and residencies of 1 or 2 years in medicine or in 1 of the specialties involved in the diagnosis and treatment of cancer. The 31 schools indicated they would have places for a total of from 75 to 100 trainees. They could give 1- to 3-year training courses, and some of them also indicated their

willingness to give short courses in cancer in relation to gynecology, urology, gastroenterology, proctology, or dermatology. In addition, there were a few schools that could take candidates for training under some special condition, 2 that could give training in some special phase of the cancer problem not listed above, and 1 that could give short courses only. A number of schools reported that although they are not in position to give this type of training at present, projected plans would make such training possible within the next year or so.

HOSPITALS

The replies indicated that there are opportunities for training for at least 25 physicians in hospitals, which were not included in the figures given by the medical schools, and that after the war still other hospitals would be able to participate in a training program. Some of the hospitals could also give short courses of training in cancer in relation to some medical specialty.

The information supplied by the medical schools and hospitals shows that they have an abundance of clinical material and adequate physical facilities for training physicians in cancer pathology, cancer surgery, and cancer radiology. Between 50 and 60 of the schools have cancer clinics approved by the American College of Surgeons in their own or affiliated hospitals. The hospitals also showed a willingness to furnish special postgraduate training in these branches of medicine in order to improve the service to cancer patients. There were serious staff shortages at the time the questionnaire was answered, but these will be relieved by the return to civilian life of persons then in the military service or engaged in war work.

The question of the best use of the available teaching facilities as indicated by the questionnaire survey, as well as the content of postgraduate courses in cancer, is one that merits serious consideration by those responsible for medical education if the challenge of the ever-increasing number of cancer deaths is to be met.

OTHER TYPES OF POSTGRADUATE EDUCATION

Only a limited number of physicians will want to take or find it possible to spend the time required to take long courses in the diagnosis and treatment of cancer. Most of those who do undoubtedly will find positions in cancer hospitals, hospitals with large cancer services, or will locate in the larger population centers. For the most part, the cancer patient does not consult a cancer specialist until he already knows or suspects that he has cancer. The general medical service in a community is given by the general practitioner. It is obvious that the training in cancer which the general physician should have, must be given him either in his regular medical school course or through channels easily accessible to him after he begins his practice. These physicians are in the most favorable position to help in the control of cancer since they are the ones who have the first opportunity to note precancerous lesions and to discover a cancer in its earliest stage.

A number of different activities have been undertaken by State departments of health and by State and local medical societies to meet the needs of these physicians. Examples of these activities are the cancer teaching day programs conducted by the New York State Department of Health in which physicians from several communities meet for an afternoon and evening program of lectures on cancer by physicians specially trained in this branch of medicine. Massachusetts State Department of Health has organized a number of cancer clinics to which physicians may bring their patients. These clinic sessions may be attended by any interested physician. Similar service is rendered by many cancer clinics in other States.

Refresher courses of short duration have recently been conducted at the University of Minnesota, attended not only

by Minnesota physicians but also physicians from other States. The Kansas State Department of Health some years ago sponsored a refresher course for the physicians of that State. In several States, cancer manuals have been published and distributed to all physicians of the State. Cancer committees have been appointed by almost every State medical society, and State and local societies have helped to make their members more alert to the problem of cancer control by sponsoring cancer programs at medical meetings and publishing articles on cancer in their journals.

TRAINEESHIPS OF THE NATIONAL CANCER INSTITUTE

It is obvious that only physicians who are deeply interested in cancer will spend the extra years in training necessary to give them special competency in this disease and that in many instances it will be impossible for them to take such training unless they have some kind of financial assistance during their training period. Traineeships like those provided by the National Cancer Institute help to meet this need. Trainees are appointed on the basis of their qualifications, age, and suitability for the work. Appointments are made for a year at a time, and in most cases are extended for 1 or 2 years, 3 years of training being the maximum. The usual stipend is $6 per day. Up to July 1, 1945, 82 physicians had been given appointments under this program. One-third of them have remained in training for 2 years or longer. Several have completed the full 3-year training period. Many more would have done so but for the disruption of the program by the demand for physicians in the military service during the war. With the return to a peace-time basis, the training program will be expanded.

Some of the philanthropic foundations of the country also promote the training of physicians in the diagnosis and treatment of cancer by awarding fellowships which enable physicians to prolong their training in this field.

PART II. BASIC ELEMENTS OF A CANCER PROGRAM

The study of the cancer facilities and services in the various States reveals a great diversity in their nature and extent. It is recognized by the Committee that it is not practicable to formulate a single program which will fit the individual needs of every State. The number and types of activities that are to be carried on in any one State are dependent upon local conditions, the cooperation effected among various groups, the funds available, and the opinions of the people as to the most effective way of spending those funds. However, the Committee believes it useful to present for the consideration of both governmental and nongovernmental organizations engaged in cancer control work the basic features of a comprehensive State program. It is the opinion of the Committee that a fully developed program should include the following: statistical research, educational activities with lay and professional groups, and the provision of adequate diagnostic and treatment facilities, including prevention or detection clinics, diagnostic and treatment clinics, consultation services, tissue diagnostic services, an adequate number of hospital beds, and special facilities and services for terminal patients at hospitals or in their own homes.

STATISTICAL RESEARCH

The planning and conduct of a cancer program must be based on a knowledge of the extent of the cancer problem within the State. This requires the systematic collection of statistics and the evaluation of results from year to year. Public-health officials may have different opinions with regard to the types of statistical studies to be made. However, they undoubtedly will agree that careful analyses should be made of the State cancer mortality statistics in order to determine the relative importance of cancer of the various sites of the body, differences in cancer among the sexes, in different races, and in different sections of the State. To secure information on cancer morbidity, some States have passed laws or regulations making cancer a reportable disease. In other States, a cancer registry has been found very successful. Such a registry, if well-run, probably provides the most complete and accurate information at all times of practically all the cancer cases within the State. It also gives essential data for use in evaluating the results of the program, a necessary step in determining its strength and weaknesses and need for revision.

EDUCATION

A second important element in a State cancer program is educational activities. People must know enough about cancer to be on guard against the disease, to have periodic physical examinations, and to seek medical care promptly upon the discovery of a suspicious sign or symptom. Physicians must be alert to the need for careful examination of their patients in order to detect early signs of cancerous or precancerous lesions and must be prepared to make available to patients the best diagnostic and therapeutic techniques.

PUBLIC EDUCATION

Educational activities for the public should reach all groups, both organized and unorganized, of all social and economic levels. They should include work in the schools and colleges. The mediums for such work include such well-recognized ones as lectures, radio, exhibits, literature, newspaper, and magazines.

PROFESSIONAL EDUCATION

Professional educational activities should reach all groups concerned with the care of the cancer patient, physicians, nurses, dentists, and students training in these professions. Types of educational activities among physicians are discussed in Part I of this report.

Since the dentist has such an excellent opportunity to note abnormalities or pathologic conditions of the oral cavity,

it is important that he understand the relation of such conditions to cancer. The nurse not only administers the greater part of the actual bedside care of the patient but also has an important role in public-health activities. It is essential that she should have adequate training in cancer nursing and that she should understand the importance of cancer as a public-health problem. The co-operation of dental and nursing organizations should be enlisted in educational activities among their own members and in efforts to see that the subject of cancer is adequately covered in dental- and nursing-school curriculums.

MEDICAL FACILITIES AND SERVICES

The education of the public to guard themselves against cancer will be without effect unless the necessary facilities and services are available to them. The third and last basic element in a State cancer program, therefore, is the provision of adequate preventive, diagnostic, and treatment facilities and services.

PREVENTIVE SERVICES

Cancer prevention clinics have already been started in a number of cities and carried on long enough to prove their practicability and value. As an example, the experience of five clinics in Philadelphia, sponsored by the International Cancer Research Foundation, is cited. During the period July 5, 1944 to July 31, 1945, 2,552 persons sought physical examinations in these clinics. More than two-fifths of these persons were under 41 years of age. Twelve persons, or approximately 1 in every 200, had a malignant lesion. The list of other abnormalities includes: Cervical lesions, 704; cardiovascular disturbances, 517; skin lesions, 271; hemorrhoids, 378; varicosities, 316; cystoceles, 200; rectoceles, 185; nevi, 144; obesity, 109; GI disturbances, 78; hernias, 59; prostate abnormalities, 55; papillomas, 60; fibromyomas, 24; fibroids, 67; miscellaneous tumors, 41; myomas, 30; lipomas, 36; vaginitis, 64; tuberculosis, 6; teeth required attention in 102 cases and feet in 241.

The fact that the clinics have been unable to accept for examination all persons making application, even though they are still booked up for weeks in advance, indicates the public demand for the service. The findings in the examinations prove the need for it. Many of the lesions found, if allowed to go uncorrected, might develop into cancer years later.

The establishment of an adequate number of cancer-prevention clinics to provide examinations, within a reasonable distance from all sections of the State and at fees adjusted to the means of all economic groups, is an essential part of a complete cancer service within a State. The fees at the Philadelphia clinics ranged from no charge to a maximum of $10. The clinic quarters are furnished free by the five hospitals.

Standards for cancer-prevention, or cancer-detection clinics have been established by a committee appointed by the American Cancer Society and approved by the American Medical Association. Copies may be obtained from the society. Information concerning the organization of such clinics is given in an article entitled "The Organization and Results of Health-Maintenance Cancer-Prevention Clinics," by Mildred W. S. Schram.[1]

DIAGNOSTIC FACILITIES AND SERVICES

Tissue Diagnostic Services

Tissue diagnostic service should be available to all sections of a State, either through a central laboratory or laboratories in general hospitals. The question of financing such a service is, of course, one to be decided within the State. Two States, Massachusetts and New York, consider it advisable to make this type of service available free to all citizens, regardless of economic status. In some other States, such services are made available without cost only to patients unable to pay. The material gathered in such a tissue diagnostic service will be of value in establishing State cancer registries.

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[1] J. A. M. A., 129 : 275–277 (Sept. 22, 1945).

DIAGNOSTIC CLINICS

A number of tumor diagnostic clinics meeting the standards set up by the American College of Surgeons should be established in proportion to the population. The committee considers a reasonable objective to be one such clinic for every 50,000 people. These clinics should be so distributed geographically as to be within easy access of persons from all sections of the State.

TREATMENT FACILITIES AND SERVICES

Clinics

Treatment clinics meeting the standards set up by the American College of Surgeons should be available in the same ratio to the population and the same geographical distribution as are diagnostic clinics. Whenever possible, both diagnostic and treatment services should be available at the same center. The Committee believes that in general an adequate state-wide cancer service will be realized more rapidly if cancer diagnostic and treatment clinics are developed at general hospitals. A number of physicians with special training and experience in the diagnosis and treatment of cancer should be available to the local clinics and physicians generally for early consultation services in doubtful, difficult, or complicated cases.

Hospital Beds

Treatment facilities necessarily include hospital beds. All cases treated by surgery and many of those treated by radiation require hospitalization for long or short periods, depending upon the circumstances in each case.

Since in most general hospitals there is not likely to be any special designation of beds for cancer cases, the question whether there are enough hospital beds available for cancer cases in any community is largely a question whether there are enough hospital beds available for all sick persons requiring hospitalization.

Points which must be considered in studying the need for hospital beds in any community are the number of cancer cases in the area to be served by the hospitals, the number of cases that will be hospitalized, the period of hospitalization needed for cases of cancer of the various sites of the body, and the geographic distribution of the available hospitals. Unless it is possible to obtain such data by actual survey, estimated figures have to be used. Prevalence rates which may be used in estimating on a population basis the number of cases of cancer in a community have been published by the United States Public Health Service.[2] Factors which may be used in estimating the number of cases of cancer on the basis of the number of deaths in a community have been worked out by Lombard, of Massachusetts.[3] The Cancer Research Division of the Connecticut State Department of Health[4] has made studies of the data secured in its cancer registry which may be used in making estimates of the percentage of cases in a community that will be hospitalized and the length of the period of hospitalization according to the site of the cancer. By applying these figures to the population in the area to be studied, estimates can be made of the number of cases of cancer of each site of the body in the area, the number of persons that will be hospitalized, and the total number of days of hospitalization that will be required. Data on size, type, and location of the hospitals in any area are available in hospital directories. All these data may easily be obtained and will be of value to persons studying local hospitalization problems.

Adequate care for cancer patients involves also consideration of the type of care available in any community. The most highly skilled cancer service may be expected to be found in the cancer clinic of a general hospital or in a special cancer hospital. The concen-

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[2] Illness from Cancer in the United States. U. S. Public Health Service, Washington, D. C. Reprint No. 2537 from the Public Health Reports.

[3] Annual Report, Massachusetts Department of Public Health, Division of Adult Hygiene, p. 41, 1940.

[4] Unpublished data. For details write the Division of Cancer Research, State Department of Health, Hartford, Conn.

tration of cancer cases in such a clinic or hospital provides an opportunity for observation and study that inevitably results in giving to the personnel in charge of such a center a high degree of skill in handling cancer cases.

The question whether medical care for cancer patients can be provided better through the establishment of cancer clinics or wards in general hospitals or in special cancer hospitals is one which is now being considered in a number of the States, and which each State will determine for itself. The Committee is of the opinion, however, that the best interests of the State will be served if such cancer hospitals as are provided are made available both to paying and nonpaying patients. Cancer hospitals should be built within large population centers, unless it is known in advance by actual survey that the demand for hospitalization will be sufficient to warrant locating a cancer hospital in a center with a small population.

Facilities for Care of the Advanced Cancer Patient

The provision of services and facilities for the care of the advanced cancer case must be given consideration in the organization of the cancer services in any State. The provision of adequate hospital facilities and medical and nursing personnel with special training in cancer as discussed previously is an important step in the improvement of the care given to the patient, for whom it is recognized that no further benefit is to be derived from surgical and radiological treatment. Experts in the field of cancer know that after these means have been exhausted there is still much that can be done to support the patient both physically and mentally, to make him more comfortable, and to prolong his life. This phase of the care of the cancer patient is the one that often receives the least attention in medical schools. It should, therefore, be stressed in the postgraduate cancer education activities for physicians.

The question where the advanced cancer patient will receive care is one to be settled individually in each case as it involves the wishes of the patient and his family and their economic status, as well as the types of facilities available. Some patients will wish to remain in their own homes or with relatives and others to go to an institution. Wherever they are cared for, they should have the benefit of medical supervision by a physician with special training and interest in the care of the advanced cancer patient, and nursing service should be available to be used as needed.

The problem of providing institutional facilities for the care of advanced cancer patients probably can be solved best as a part of the whole problem of providing facilities for all chronically ill persons of whatever disease, rather than as an isolated problem. This is a problem with which all States are faced. The general hospital can accept only a portion of the chronically ill patients desiring hospitalization, even if it were economically practical to use such facilities for this purpose. The provision of facilities for advanced cancer patients in chronic-disease hospitals or nursing homes is therefore one of the necessary elements in a complete organization of cancer service in a State.

A study of the needs of terminal cancer patients in Massachusetts, made by Hilda La Rocca, contains data which will be of valuable assistance to persons concerned with this problem. The report of the study has not yet been published but a preliminary one may be obtained from the Division of Chronic Diseases, Massachusetts State Department of Health, Boston, Mass. Another useful report is "Terminal Care in Cancer," by Ruth Abrams, Gertrude Jameson, Mary Poehlman, and Sylvia Snyder.[5]

CANCER-CONTROL ACTIVITIES TO BE CONDUCTED BY STATE HEALTH DEPARTMENTS

Since the State department of health is the State agency responsible for look-

[5] New England J. Med., 232: 719–724 (June 21, 1945).

ing after the health of the people, it is logical for it to assume leadership in the cancer field, unless the State legislature has placed this responsibility with some other State agency as has been done in Arkansas, Missouri, New Hampshire, and Vermont.

Cancer is not a disease that can be controlled by the special effort of one group or by one activity. To have a complete service in a State, there must be integration of effort of all organizations and individuals. The agency responsible for the State cancer program should be the stimulator and integrator of the cancer control activities to insure a complete practical program including statistical studies, educational activities, and the provision of the clinical facilities necessary for rendering adequate preventive, diagnostic, and treatment services to the public. To achieve this goal, it is believed that the State health department or State cancer commission, whichever has the legal responsibility, may properly carry on any activities that will result in making available to all citizens of the State the information and services outlined as the basic features of a State cancer program.

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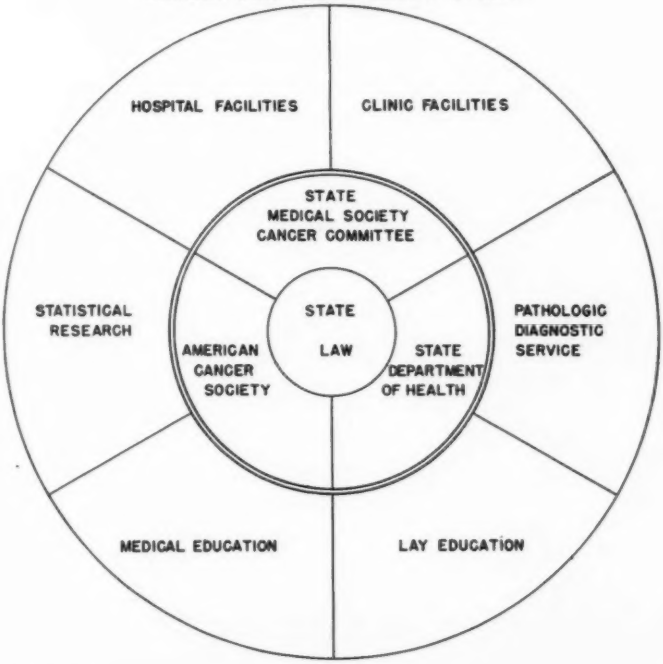
PART III. BASIC INFORMATION FOR USE IN STUDYING AND PLANNING STATE-CANCER-CONTROL ACTIVITIES, WITH ORGANIZATION CHARTS AS OF 1945 [6]

The facts about each State that will have a bearing on the development of their cancer programs are summarized briefly. The figure depicts the basic elements of a complete cancer service within a State. The center of the circle indicates the existence of a State law establishing a program for the control of cancer; the next concentric section is divided into three parts indicating the three groups at work on this problem, and the outside of the circle is divided into the six parts of a rounded cancer program.

A similar diagram is given for each State. The number of general hospital beds per 100,000 population for 1940 is placed in the section headed "Hospital Facilities." This information was obtained from the Journal of the American Medical Association, vol. 116, No. 11, March 15, 1941, and is used as a measure of existing general-hospital facilities in each State. For the United States as a whole in 1940 there were 351 general hospital beds per 100,000 population. In the section entitled "Clinic Facilities" is given the average population served by known cancer clinics in each State. One clinic for every 50,000 population is anticipated. The section entitled "Medical Education" refers to special projects of the cancer committees of the State medical societies or the State department of health rather than to graduate or undergraduate medical-school training. Teaching clinics or cancer handbooks for physicians

[6] Prepared by the staff of the Cancer Research Division, Connecticut State Department of Health, with the collaboration of Frances A. Macdonald.

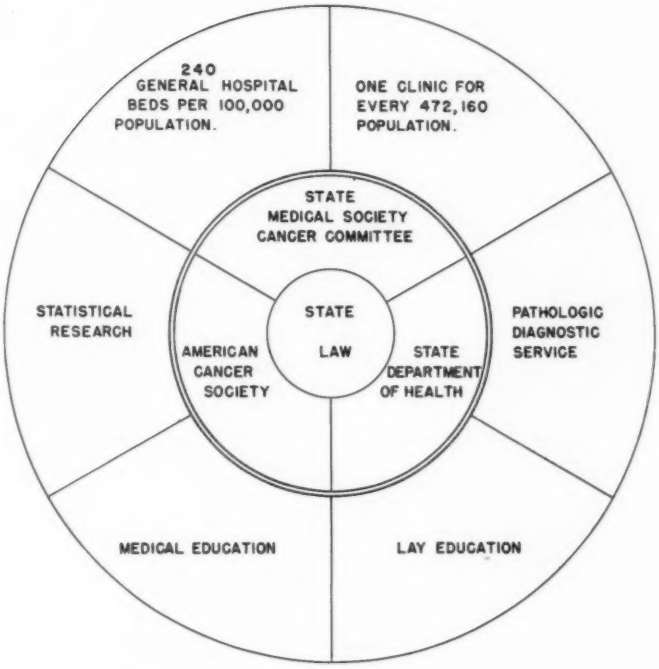
BASIC ELEMENTS OF A COMPLETE CANCER SERVICE WITHIN A STATE



come under this heading. The titles of the other sections are self-explanatory. In those States in which certain parts of a cancer program are not known to be present, shaded areas indicate this fact.

The adjusted death rates for total cancer and by six broad site classifications are given as a relative measure of reported cancer between States. They are figured by Pearl's method of adjustment. The correction factor is based on the 1930 census population of the State by age groups, applied to the United States registration rates for 1935. The theoretical rate thus obtained is divided by the crude registration rate of 1935 based on the total United States population estimated for 1935. This correction factor is then applied to the crude actual rate of the average of 1935 and 1937 deaths and population. By this method of computation, the age-adjusted rates for one State are comparable with those for another State.

ALABAMA



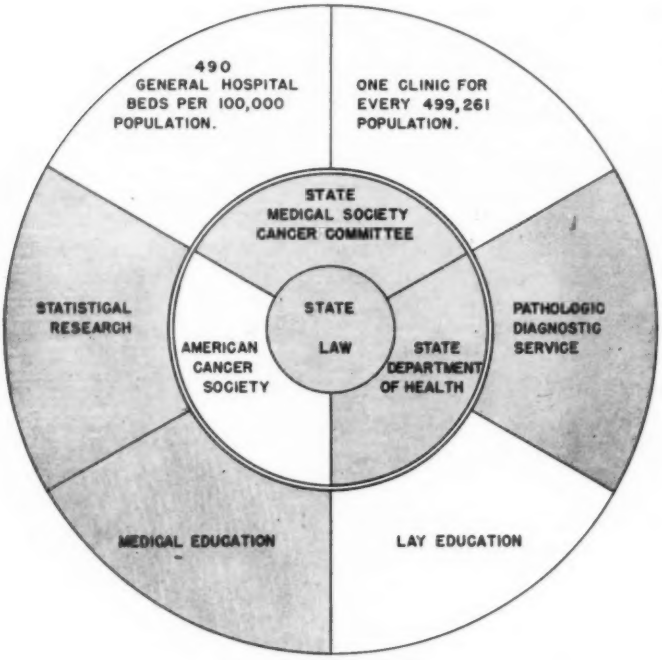
1940	
Population	2,832,961
Urban—percent	30.2
Rural—percent	69.8
White race—percent	65.3
Negro race—percent	34.7
Other races—percent	----
Median age—years	23.8
Area—square miles	51,609
Counties—number	67
Cities, towns, villages	279

Medical resources	
Physicians (1942)	2,123
General hospitals	84
General hospitals, over 50 beds	41
Hospitals for nervous and mental diseases	5
Tuberculosis hospitals	8
Convalescent and rest homes	1
Total cancer deaths, 1942	1,806

Age-adjusted, cancer-death rates per 100,000

Total cancer	78.17
Buccal cavity and pharynx	3.62
Breast	7.52
Uterus	16.33
Stomach and duodenum	13.18
Skin	3.42
Liver and biliary passages	5.25

ARIZONA



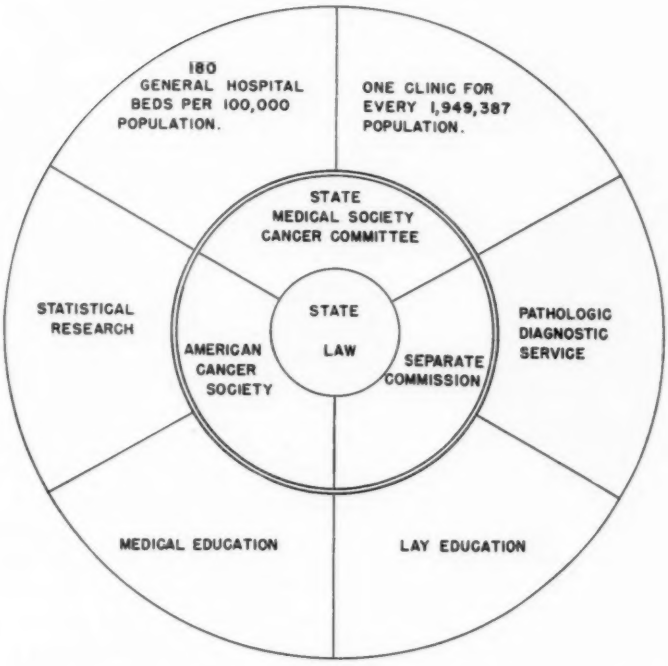
1940	
Population	499,261
Urban—percent	34.8
Rural—percent	65.2
White race—percent	85.5
Negro race—percent	3.0
Other races—percent	11.5
Median age—years	25.4
Area—square miles	113,909
Counties—number	14
Cities, towns, villages	34

Medical resources	
Physicians (1942)	615
General hospitals	50
General hospitals, over 50 beds	18
Hospitals for nervous and mental diseases	2
Tuberculosis hospitals	13
Convalescent and rest homes	---
Total cancer deaths, 1942	413

Age-adjusted, cancer-death rates per 100,000

Total cancer	107.28
Buccal cavity and pharynx	3.73
Breast	6.77
Uterus	13.23
Stomach and duodenum	28.93
Skin	4.84
Liver and biliary passages	6.53

ARKANSAS



Separate commission established July 1, 1945. New program in formative period.

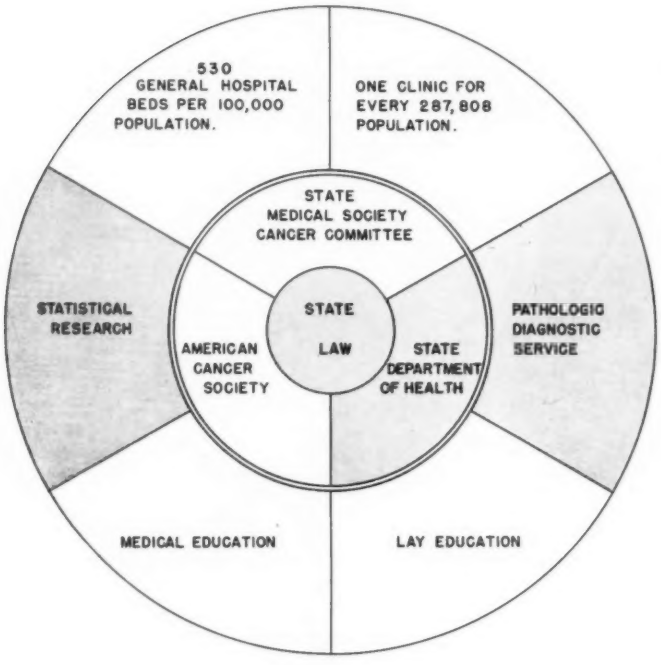
1940	
Population	1,949,387
Urban—percent	22.2
Rural—percent	77.8
White race—percent	75.2
Negro race—percent	24.8
Other races—percent	-----
Median age—years	24.8
Area—square miles	53,102
Counties—number	75
Cities, towns, villages	412

Medical resources	
Physicians (1942)	1,806
General hospitals	60
General hospitals, over 50 beds	21
Hospitals for nervous and mental diseases	2
Tuberculosis hospitals	2
Convalescent and rest homes	-----
Total cancer deaths, 1942	1,308

Age-adjusted, cancer-death rates per 100,000

Total cancer	62.25
Buccal cavity and pharynx	3.38
Breast	5.29
Uterus	11.24
Stomach and duodenum	12.19
Skin	3.34
Liver and biliary passages	5.29

CALIFORNIA



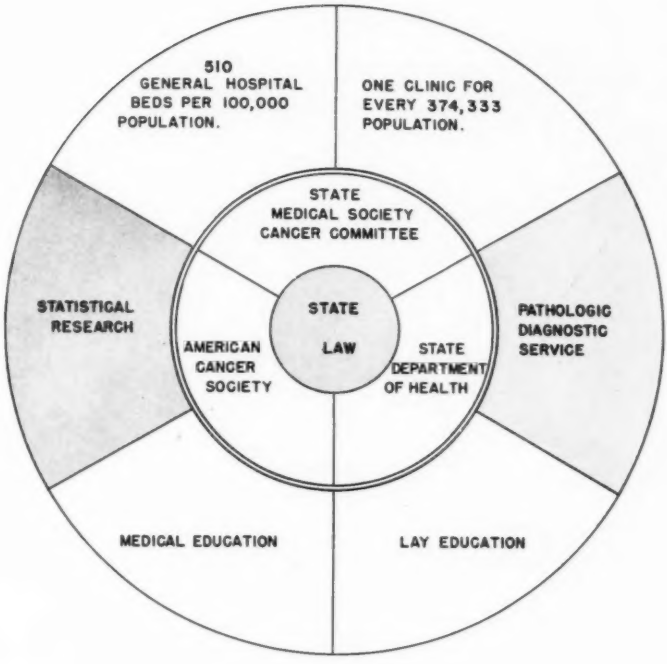
1940	
Population	6,907,387
Urban—percent	71.0
Rural—percent	29.0
White race—percent	95.5
Negro race—percent	1.8
Other races—percent	2.7
Median age	33.0
Area—square miles	158,693
Counties—number	58
Cities, towns, villages	285

Medical resources	
Physicians (1942)	12,365
General hospitals	305
General hospitals, over 50 beds	106
Hospitals for nervous and mental diseases	36
Tuberculosis hospitals	33
Convalescent and rest homes	12
Total cancer deaths, 1942	10,576

Age-adjusted, cancer-death rates per 100,000

Total cancer	118.43
Buccal cavity and pharynx	4.05
Breast	12.27
Uterus	12.84
Stomach and duodenum	21.96
Skin	2.72
Liver and biliary passages	6.85

COLORADO



1940	
Population	1,123,296
Urban—percent	52.6
Rural—percent	47.4
White race—percent	98.5
Negro race—percent	1.1
Other races—percent	0.4
Median age	29.2
Area—square miles	104,247
Counties—number	63
Cities, towns, villages	247

Medical resources	
Physicians (1942)	1,886
General hospitals	70
General hospitals, over 50 beds	21
Hospitals for nervous and mental diseases	9
Tuberculosis hospitals	13
Convalescent and rest homes	1
Total cancer deaths, 1942	1,421

Age-adjusted, cancer-death rates per 100,000

Total cancer	102.27
Buccal cavity and pharynx	2.63
Breast	10.37
Uterus	11.62
Stomach and duodenum	21.33
Skin	1.81
Liver and biliary passages	7.67

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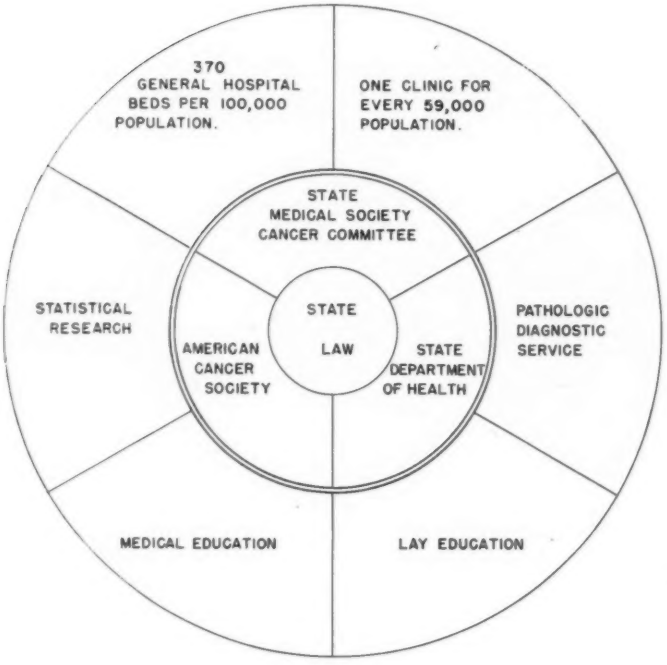
CONNECTICUT



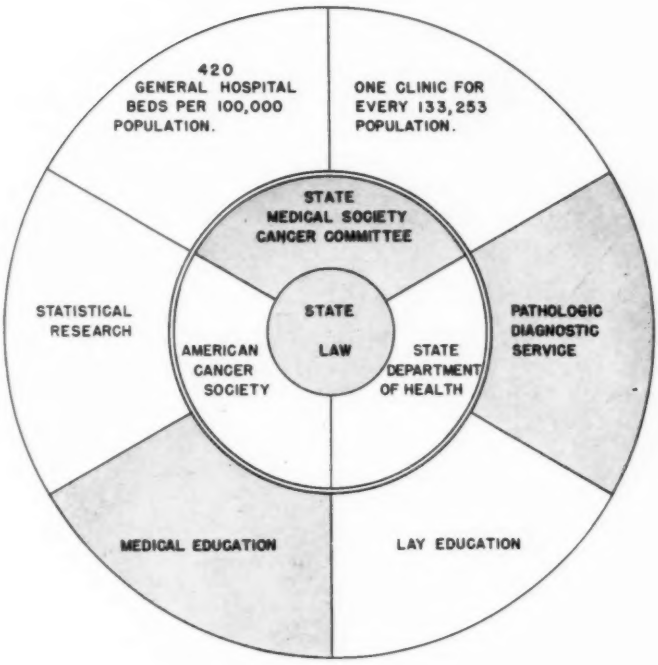
1940	
Population	1,709,242
Urban—percent	67.8
Rural—percent	32.2
White race—percent	98.0
Negro race—percent	1.9
Other races—percent	0.1
Median age	31.1
Area—square miles	5,009
Counties—number	8
Cities, towns, villages	169

Medical resources	
Physicians (1942)	2,720
General hospitals	44
General hospitals, over 50 beds	32
Hospitals for nervous and mental diseases	15
Tuberculosis hospitals	6
Convalescent and rest homes	5
Total cancer deaths, 1942	2,727

Age-adjusted, cancer-death rates per 100,000

Total cancer	120.89
Buccal cavity and pharynx	3.95
Breast	12.87
Uterus	10.72
Stomach and duodenum	21.92
Skin	2.12
Liver and biliary passages	6.86

DELAWARE



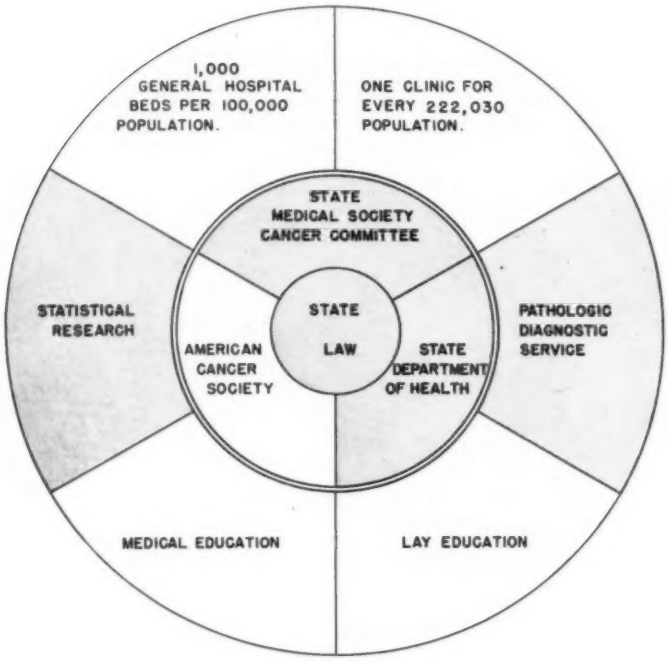
1940	
Population	266,505
Urban—percent	52.3
Rural—percent	47.7
White race—percent	86.5
Negro race—percent	13.5
Other races—percent	——
Median age—years	30.6
Area—square miles	2,057
Counties—number	3
Cities, towns, villages	52

Medical resources	
Physicians (1942)	360
General hospitals	11
General hospitals, over 50 beds	6
Hospitals for nervous and mental diseases	2
Tuberculosis hospitals	3
Convalescent and rest homes	1
Total cancer deaths, 1942	341

Age-adjusted, cancer-death rates per 100,000

Total cancer	95.60
Buccal cavity and pharynx	2.56
Breast	10.52
Uterus	13.63
Stomach and duodenum	19.75
Skin	2.32
Liver and biliary passages	7.87

DISTRICT OF COLUMBIA



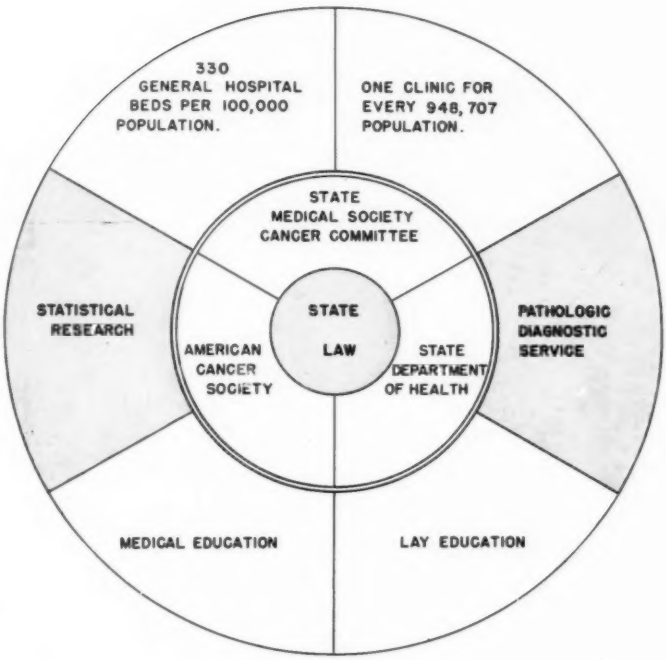
1940	
Population	663,091
Urban—percent	100.0
Rural—percent	----
White race—percent	71.5
Negro race—percent	28.2
Other races—percent	0.2
Median age—years	31.9
Area—square miles	69
Counties—number	0
Cities, towns, villages	1

Medical resources	
Physicians (1942)	4,540
General hospitals	16
General hospitals, over 50 beds	11
Hospitals for nervous and mental diseases	2
Tuberculosis hospitals	1
Convalescent and rest homes	2
Total cancer deaths, 1942	1,038

Age-adjusted, cancer-death rates per 100,000

Total cancer	123.39
Buccal cavity and pharnyx	5.49
Breast	11.99
Uterus	14.15
Stomach and duodenum	18.67
Skin	1.91
Liver and biliary passages	6.27

FLORIDA



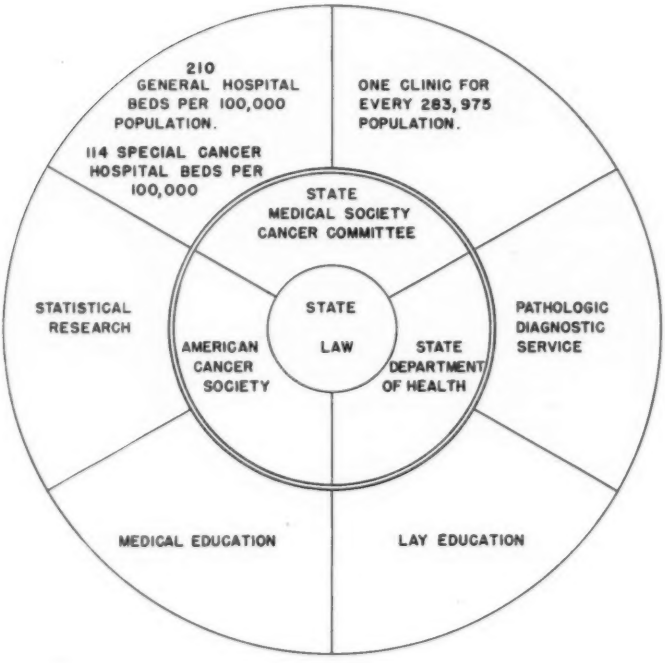
1940	
Population	1,897,414
Urban—percent	55.1
Rural—percent	44.9
White race—percent	72.8
Negro race—percent	27.1
Other races—percent	0.1
Median age—years	28.9
Area—square miles	58,560
Counties—number	67
Cities, towns, villages	283

Medical resources	
Physicians (1942)	2,391
General hospitals	116
General hospitals, over 50 beds	33
Hospitals for nervous and mental diseases	5
Tuberculosis hospitals	4
Convalescent and rest homes	3
Total cancer deaths, 1942	1,897

Age-adjusted, cancer-death rates per 100,000

Total cancer	100.11
Buccal cavity and pharynx	4.38
Breast	9.73
Uterus	16.93
Stomach and duodenum	15.82
Skin	3.78
Liver and biliary passages	6.34

GEORGIA



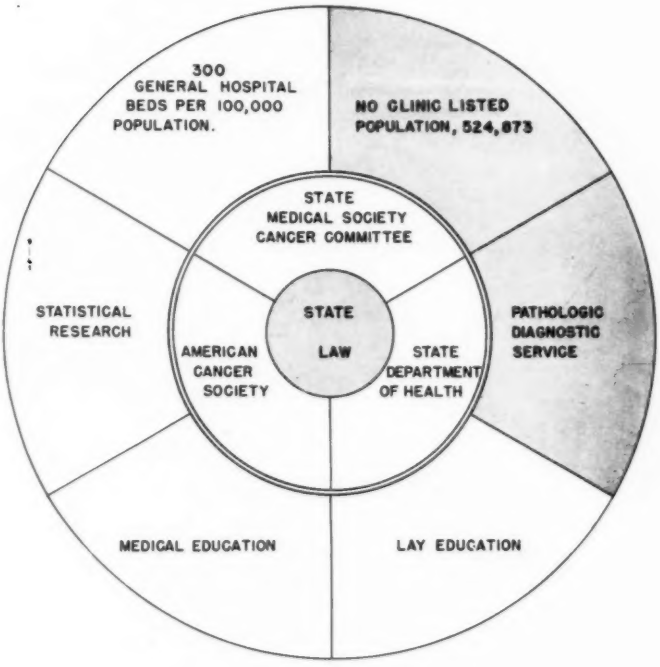
1940	
Population	3,123,723
Urban—percent	34.4
Rural—percent	65.6
White race—percent	65.3
Negro race—percent	34.7
Other races—percent	
Median age—years	24.5
Area—square miles	58,876
Counties—number	159
Cities, towns, villages	580

Medical resources	
Physicians (1942)	2,814
General hospitals	113
General hospitals, over 50 beds	35
Hospitals for nervous and mental diseases	5
Tuberculosis hospitals	3
Convalescent and rest homes	
Total cancer deaths, 1942	2,133

Age-adjusted, cancer-death rates per 100,000

Total cancer	73.61
Buccal cavity and pharynx	3.50
Breast	6.94
Uterus	13.62
Stomach and duodenum	12.45
Skin	3.47
Liver and biliary passages	5.49

IDAHO



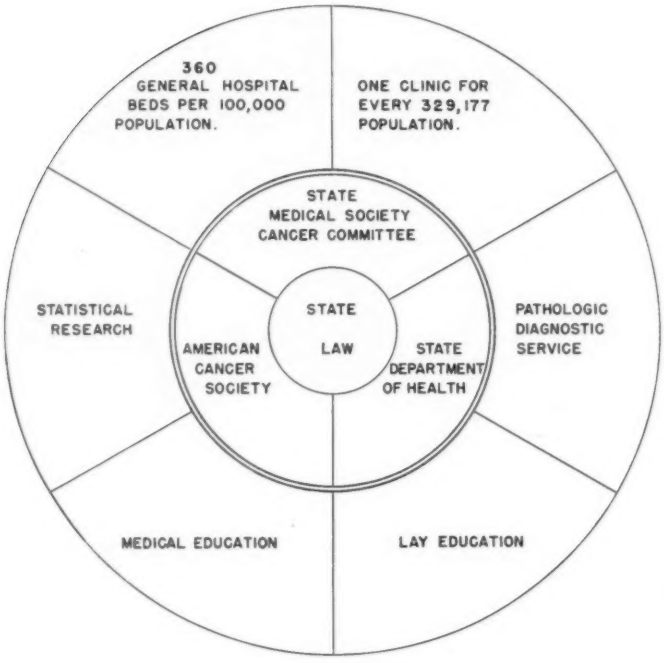
1940	
Population	524,873
Urban—percent	33.7
Rural—percent	66.3
White race—percent	98.9
Negro race—percent	0.1
Other faces—percent	0.9
Median age—years	26.4
Area—square miles	83,557
Counties—number	44
Cities, towns, villages	151

Medical resources	
Physicians	446
General hospitals	43
General hospitals, over 50 beds	10
Hospitals for nervous and mental diseases	3
Tuberculosis hospitals	1
Convalescent and rest homes	1
Total cancer deaths, 1942	481

Age-adjusted, cancer-death rates per 100,000

Total cancer	88.76
Buccal cavity and pharynx	2.76
Breast	8.16
Uterus	8.64
Stomach and duodenum	22.78
Skin	3.00
Liver and biliary passages	7.40

ILLINOIS



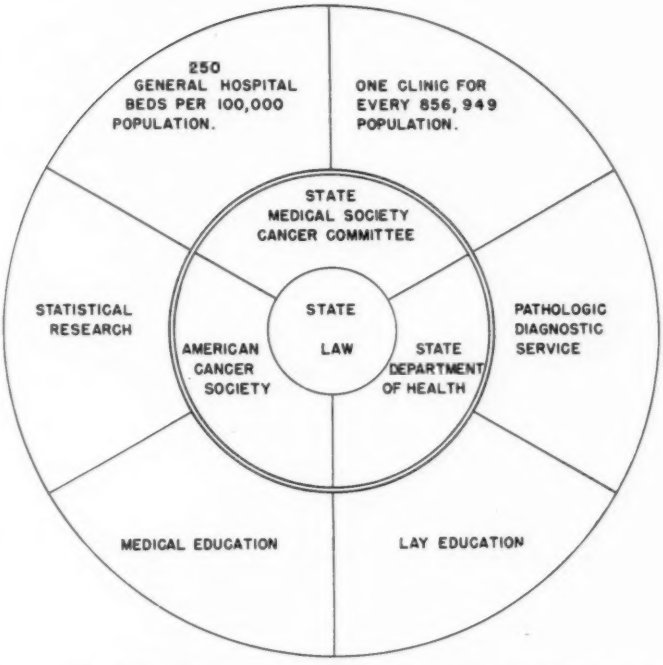
1940	
Population	7,897,241
Urban—percent	73.6
Rural—percent	26.4
White race—percent	95.0
Negro race—percent	4.9
Other races—percent	0.1
Median age—years	31.5
Area—square miles	56,400
Counties—number	102
Cities, towns, villages	1,140

Medical resources	
Physicians (1942)	12,548
General hospitals	215
General hospitals, over 50 beds	144
Hospitals for nervous and mental diseases	31
Tuberculosis hospitals	32
Convalescent and rest homes	15
Total cancer deaths, 1942	11,802

Age-adjusted, cancer-death rates per 100,000

Total cancer	126.29
Buccal cavity and pharynx	4.81
Breast	11.65
Uterus	13.54
Stomach and duodenum	24.18
Skin	2.41
Liver and biliary passages	9.35

INDIANA



Division of Adult Hygiene and Geriatrics created in the State Board of Health in 1945. Cancer program in formative period.

1940	
Population	3,427,796
Urban—percent	55.1
Rural—percent	44.9
White race—percent	96.4
Negro race—percent	3.6
Other races—percent	
Median age—years	30.3
Area—square miles	36,291
Counties—number	92
Cities, towns, villages	529

Medical resources	
Physicians (1942)	4,165
General hospitals	104
General hospitals, over 50 beds	50
Hospitals for nervous and mental diseases	14
Tuberculosis hospitals	11
Convalescent and rest homes	3
Total cancer deaths, 1942	4,501

Age-adjusted, cancer-death rates per 100,000

Total cancer	94.88
Buccal cavity and pharynx	3.12
Breast	8.75
Uterus	12.75
Stomach and duodenum	16.95
Skin	2.82
Liver and biliary passages	9.78

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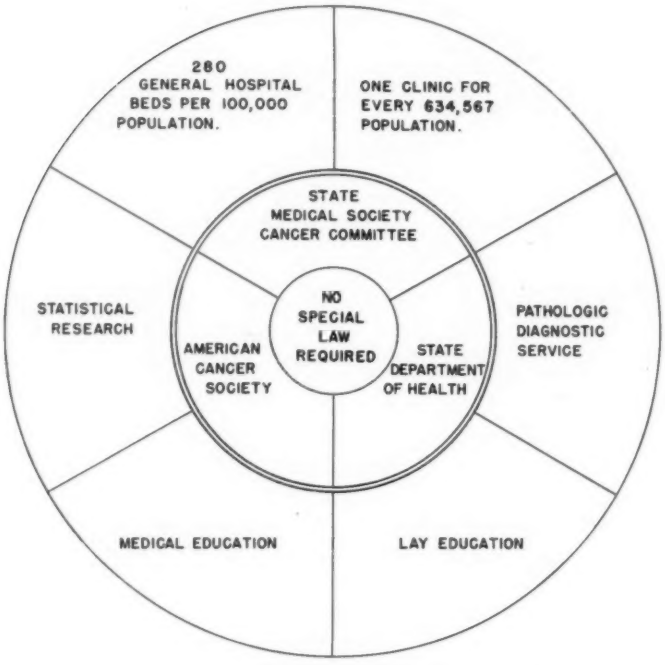
IOWA



Operates under State board of health, with no separate law.

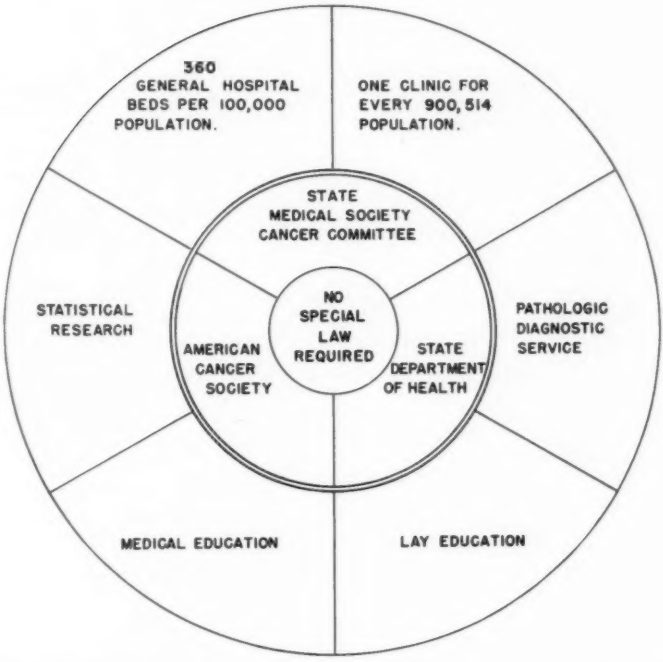
1940	
Population	2,538,268
Urban—percent	42.7
Rural—percent	57.3
White race—percent	99.3
Negro race—percent	0.7
Other races—percent	
Median age—years	30.2
Area—square miles	56,280
Counties—number	99
Cities, towns, villages	931

Medical resources	
Physicians (1942)	4,165
General hospitals	113
General hospitals, over 50 beds	38
Hospitals for nervous and mental diseases	12
Tuberculosis hospitals	5
Convalescent and rest homes	1
Total cancer deaths, 1942	3,599

Age-adjusted, cancer-death rates per 100,000

Total cancer	104.65
Buccal cavity and pharynx	2.87
Breast	10.16
Uterus	110.55
Stomach and duodenum	21.35
Skin	1.99
Liver and biliary passages	8.47

KANSAS



Operates under State board of health, with no separate law. New program in formative period.

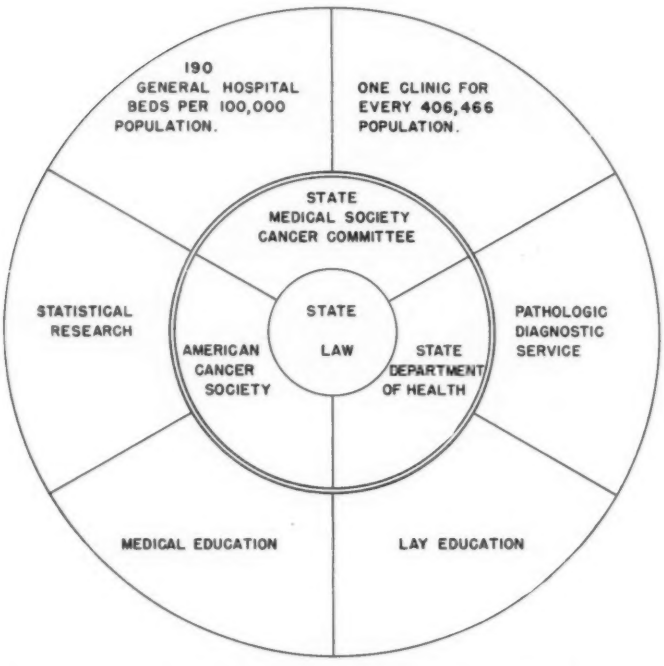
1940	
Population	1,801,028
Urban—percent	41.9
Rural—percent	58.1
White race—percent	96.3
Negro race—percent	2.6
Other races—percent	0.1
Median age—years	30.4
Area—square miles	82,276
Counties—number	105
Cities, towns, villages	589

Medical resources	
Physicians (1942)	2,042
General hospitals	110
General hospitals, over 50 beds	40
Hospitals for nervous and mental diseases	8
Tuberculosis hospitals	2
Convalescent and rest homes	-----
Total cancer deaths, 1942	2,234

Age-adjusted, cancer-death rates per 100,000

Total cancer	92.46
Buccal cavity and pharynx	3.83
Breast	9.63
Uterus	10.79
Stomach and duodenum	18.45
Skin	2.58
Liver and biliary passages	8.59

KENTUCKY



$30,000 appropriation July 1944–July 1946 to be used in a program directed jointly by health department and Kentucky Cancer Society.

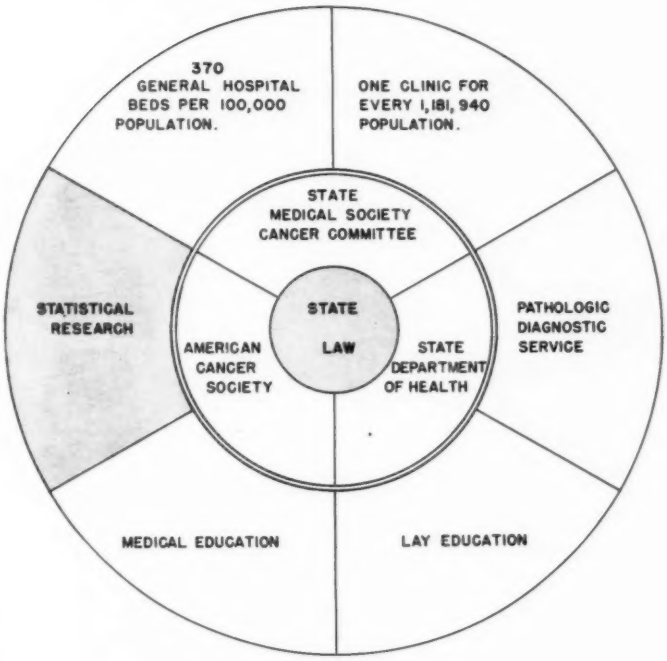
1940	
Population	2,845,267
Urban—percent	29.8
Rural—percent	70.2
White race—percent	92.5
Negro race—percent	7.5
Other races—percent	----
Median age—years	25.4
Area—square miles	40,395
Counties—number	120
Cities, towns, villages	323

Medical resources	
Physicians (1942)	2,717
General hospitals	76
General hospitals, over 50 beds	33
Hospitals for nervous and mental diseases	10
Tuberculosis hospitals	5
Convalescent and rest homes	1
Total cancer deaths, 1942	2,573

Age-adjusted, cancer-death rates per 100,000

Total cancer	75.15
Buccal cavity and pharynx	2.74
Breast	7.02
Uterus	11.11
Stomach and duodenum	13.33
Skin	2.92
Liver and biliary passages	8.63

LOUISIANA



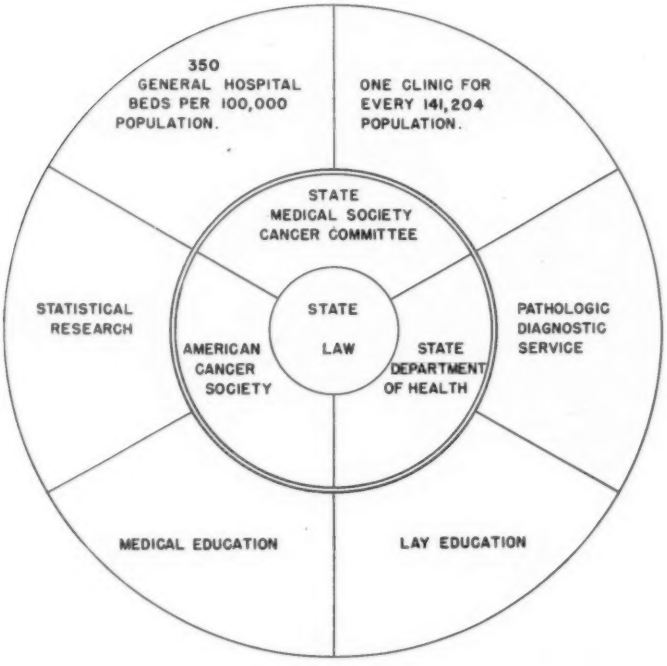
1940	
Population	2,363,880
Urban—percent	41.5
Rural—percent	58.5
White race—percent	64.0
Negro race—percent	35.9
Other races—percent	0.1
Median age—years	25.5
Area—square miles	48,523
Counties—number	64
Cities, towns, villages	210

Medical resources	
Physicians	2,601
General hospitals	74
General hospitals, over 50 beds	23
Hospitals for nervous and mental diseases	6
Tuberculosis hospitals	5
Convalescent and rest homes	1
Total cancer deaths, 1942	2,104

Age-adjusted, cancer-death rates per 100,000

Total cancer	106.25
Buccal cavity and pharynx	4.66
Breast	8.64
Uterus	17.24
Stomach and duodenum	21.37
Skin	3.70
Liver and biliary passages	7.47

MAINE



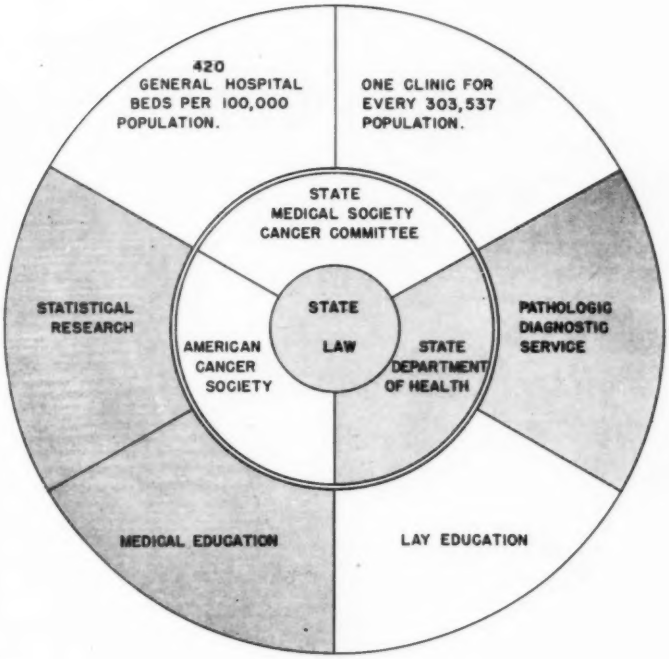
1940	
Population	847,226
Urban—percent	40.5
Rural—percent	59.5
White race—percent	99.7
Negro race—percent	0.2
Other races—percent	0.2
Median age—years	29.6
Area—square miles	33,215
Counties—number	16
Cities, towns, villages	522

Medical resources	
Physicians (1942)	1,011
General hospitals	63
General hospitals, over 50 beds	18
Hospitals for nervous and mental diseases	4
Tuberculosis hospitals	4
Convalescent and rest homes	1
Total cancer deaths, 1942	1,310

Age-adjusted, cancer-death rates per 100,000

Total cancer	108.45
Buccal cavity and pharynx	3.69
Breast	9.92
Uterus	14.35
Stomach and duodenum	20.94
Skin	2.26
Liver and biliary passages	8.72

MARYLAND



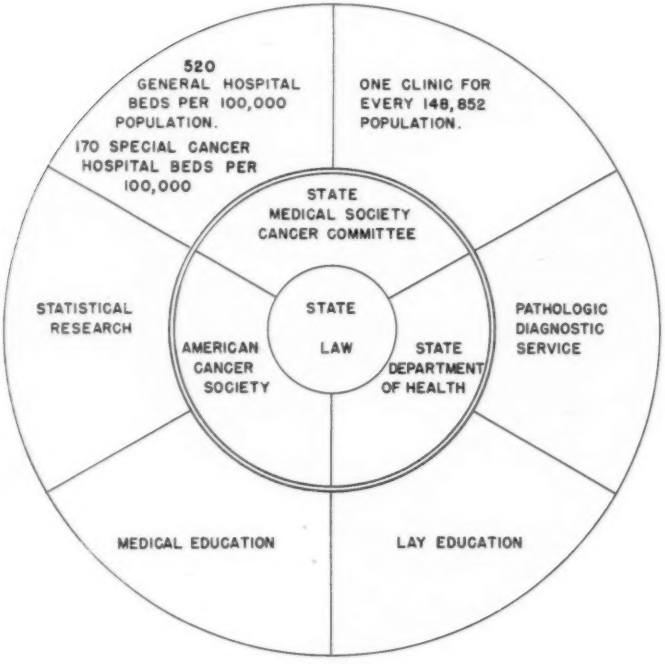
1940	
Population	1,821,244
Urban—percent	59.3
Rural—percent	40.7
White race—percent	83.4
Negro race—percent	16.6
Other races—percent	
Median age—years	29.6
Area—square miles	10,557
Counties—number	24
Cities, towns, villages	143

Medical resources	
Physicians (1942)	3,085
General hospitals	51
General hospitals, over 50 beds	29
Hospitals for nervous and mental diseases	16
Tuberculosis hospitals	6
Convalescent and rest homes	3
Total cancer deaths, 1942	2,424

Age-adjusted, cancer-death rates per 100,000

Total cancer	125.12
Buccal cavity and pharynx	4.27
Breast	11.95
Uterus	14.72
Stomach and duodenum	22.63
Skin	3.02
Liver and biliary passages	8.97

MASSACHUSETTS



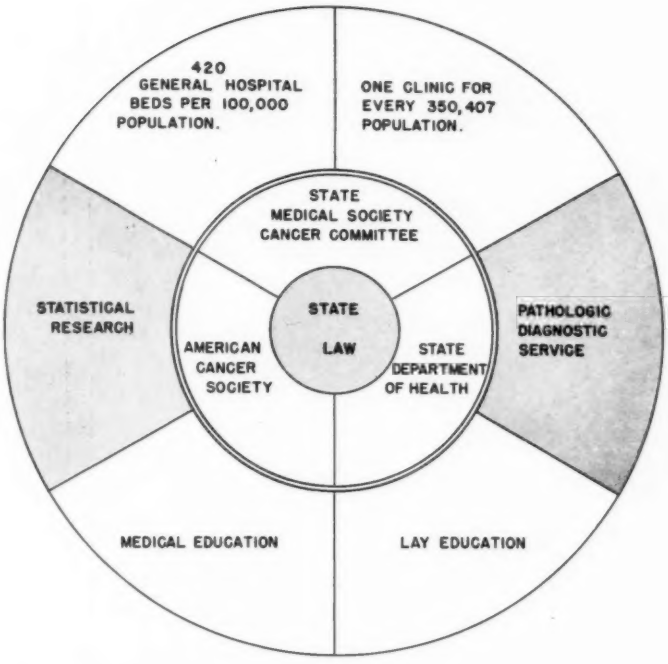
1940	
Population	4,316,721
Urban—percent	89.4
Rural—percent	10.6
White race—percent	98.6
Negro race—percent	1.3
Other races—percent	0.1
Median age—years	31.8
Area—square miles	8,257
Counties—number	14
Cities, towns, villages	351

Medical resources	
Physicians (1942)	8,085
General hospitals	142
General hospitals, over 50 beds	137
Hospitals for nervous and mental diseases	32
Tuberculosis hospitals	23
Convalescent and rest homes	7
Total cancer deaths, 1942	7,377

Age-adjusted, cancer-death rates per 100,000

Total cancer	128.73
Buccal cavity and pharynx	5.30
Breast	12.88
Uterus	11.87
Stomach and duodenum	22.81
Skin	1.97
Liver and biliary passages	7.01

MICHIGAN



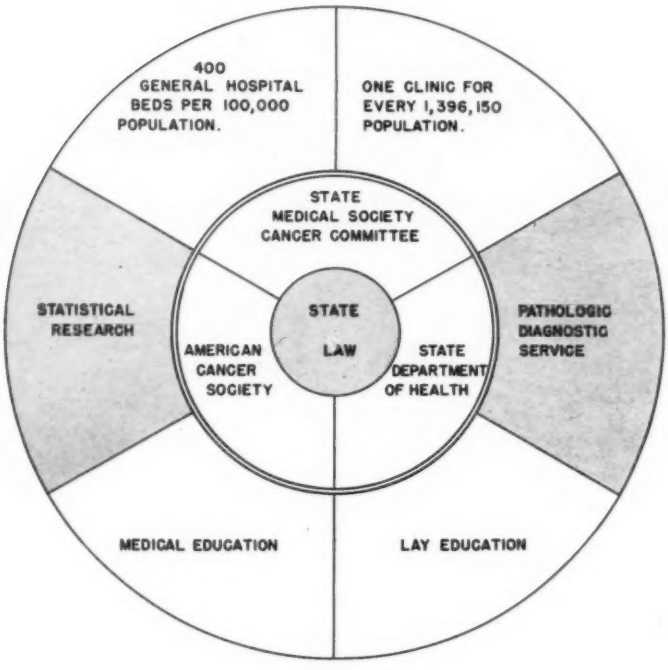
1940	
Population	5,256,106
Urban—percent	65.7
Rural—percent	34.3
White race—percent	95.9
Negro race—percent	4.0
Other races—percent	0.1
Median age—years	29.3
Area—square miles	58,216
Counties—number	83
Cities, towns, villages	475

Medical resources	
Physicians (1942)	6,509
General hospitals	181
General hospitals, over 50 beds	77
Hospitals for nervous and mental diseases	19
Tuberculosis hospitals	26
Convalescent and rest homes	5
Total cancer deaths, 1942	6,423

Age-adjusted, cancer-death rates per 100,000

Total cancer	116.37
Buccal cavity and pharynx	3.78
Breast	10.85
Uterus	13.62
Stomach and duodenum	24.76
Skin	2.10
Liver and biliary passages	8.12

MINNESOTA



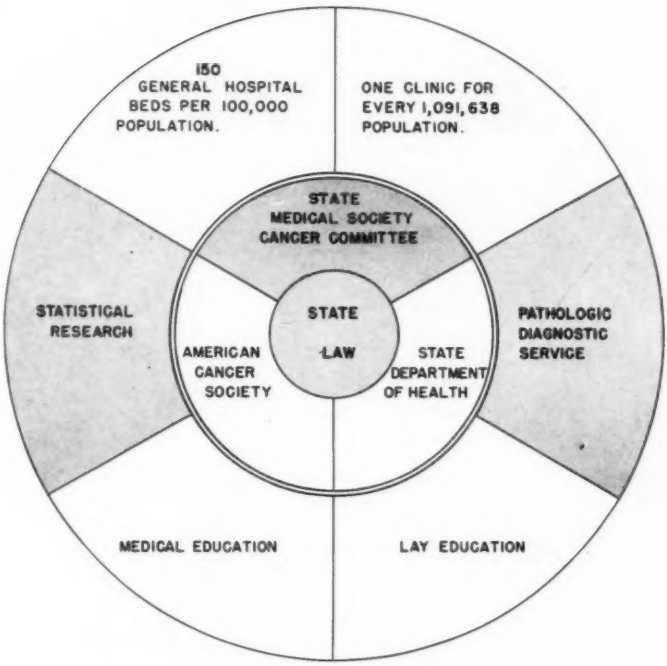
1940	
Population	2,792,300
Urban—percent	49.8
Rural—percent	50.2
White race—percent	99.2
Negro race—percent	0.7
Other races—percent	0.1
Median age—years	29.5
Area—square miles	84,068
Counties—number	87
Cities, towns, villages	745

Medical resources	
Physicians (1942)	3,614
General hospitals	166
General hospitals, over 50 beds	51
Hospitals for nervous and mental diseases	12
Tuberculosis hospitals	15
Convalescent and rest homes	5
Total cancer deaths, 1942	3,771

Age-adjusted, cancer-death rates per 100,000

Total cancer	124.80
Buccal cavity and pharynx	3.43
Breast	10.77
Uterus	9.45
Stomach and duodenum	29.88
Skin	1.68
Liver and biliary passages	7.44

MISSISSIPPI



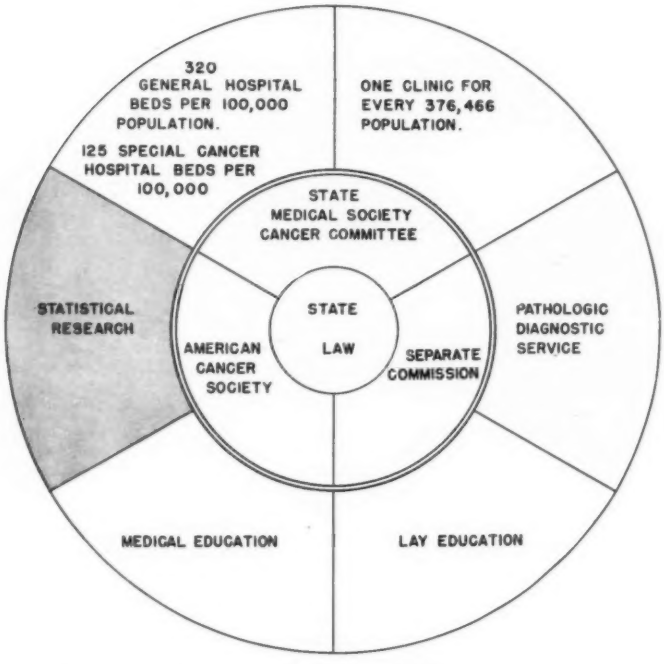
1940	
Population	2,183,276
Urban—percent	19.8
Rural—percent	80.2
White race—percent	50.7
Negro race—percent	49.2
Other races—percent	0.1
Median age—years	23.8
Area—square miles	47,716
Counties—number	82
Cities, towns, villages	295

Medical resources	
Physicians (1942)	1,525
General hospitals	98
General hospitals, over 50 beds	30
Hospitals for nervous and mental diseases	5
Tuberculosis hospitals	1
Convalescent and rest homes	3
Total cancer deaths, 1942	1,249

Age-adjusted, cancer-death rates per 100,000

Total cancer	81.02
Buccal cavity and pharynx	3.56
Breast	7.22
Uterus	17.49
Stomach and duodenum	13.90
Skin	3.05
Liver and biliary passages	7.79

MISSOURI



Law established State cancer hospital for indigent.

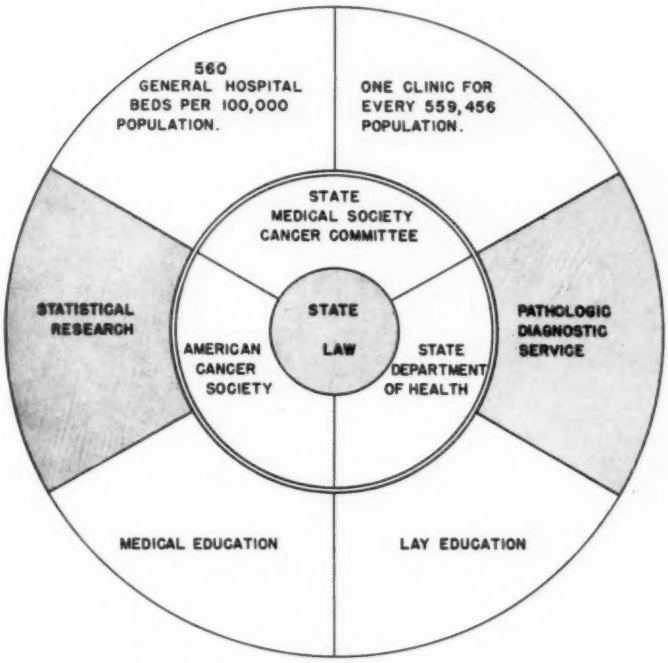
1940	
Population	3,784,664
Urban—percent	51.8
Rural—percent	48.2
White race—percent	93.5
Negro race—percent	6.5
Other races—percent	0
Median age—years	31.1
Area—square miles	69,674
Counties—number	115
Cities, towns, villages	793

Medical resources	
Physicians (1942)	5,183
General hospitals	104
General hospitals, over 50 beds	49
Hospitals for nervous and mental diseases	16
Tuberculosis hospitals	6
Convalescent and rest homes	3
Total cancer deaths, 1942	5,157

Age-adjusted, cancer-death rates per 100,000

Total cancer	100.43
Buccal cavity and pharynx	4.50
Breast	9.51
Uterus	12.44
Stomach and duodenum	17.42
Skin	2.15
Liver and biliary passages	10.32

MONTANA



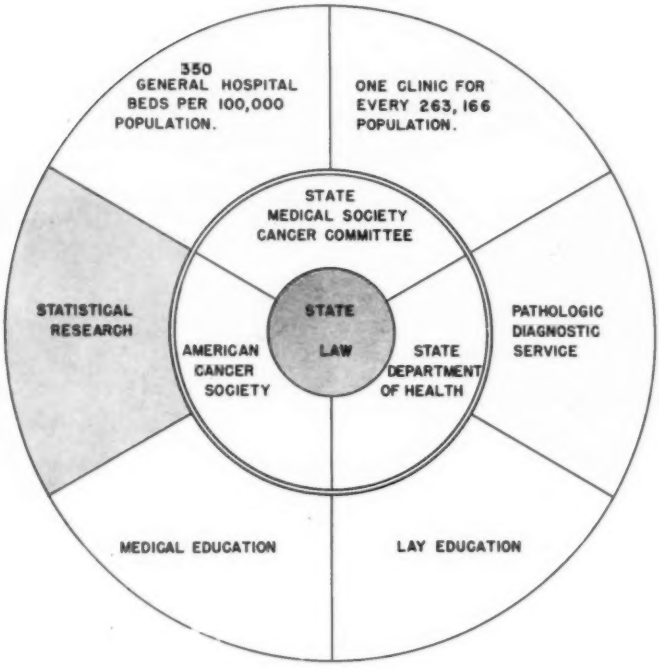
1940	
Population	559,456
Urban—percent	37.8
Rural—percent	62.2
White race—percent	96.6
Negro race—percent	0.2
Other races—percent	3.2
Median age—years	28.8
Area—square miles	147,138
Counties—number	56
Cities, towns, villages	115

Medical resources	
Physicians	556
General hospitals	54
General hospitals, over 50 beds	18
Hospitals for nervous and mental diseases	1
Tuberculosis hospitals	1
Convalescent and rest homes	---
Total cancer deaths, 1942	643

Age-adjusted, cancer-death rates per 100,000

Total cancer	106.33
Buccal cavity and pharynx	3.39
Breast	11.89
Uterus	9.92
Stomach and duodenum	24.67
Skin	1.96
Liver and biliary passages	9.41

NEBRASKA



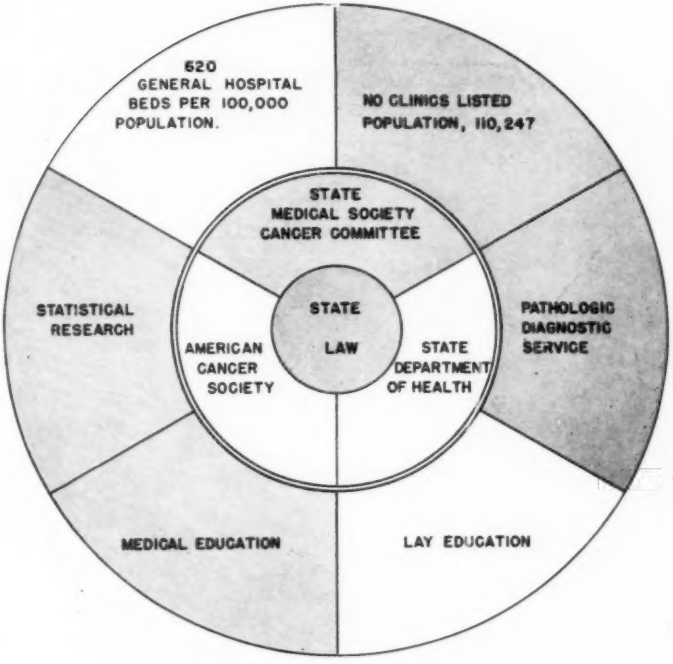
1940	
Population	1,315,834
Urban—percent	39.1
Rural—percent	60.9
White race—percent	98.6
Negro race—percent	1.1
Other races—percent	0.3
Median age—years	29.7
Area—square miles	77,237
Counties—number	93
Cities, towns, villages	531

Medical resources	
Physicians (1942)	1,637
General hospitals	97
General hospitals, over 50 beds	26
Hospitals for nervous and mental diseases	4
Tuberculosis hospitals	1
Convalescent and rest homes	-----
Total cancer deaths, 1942	1,714

Age-adjusted, cancer-death rates per 100,000

Total cancer	104.37
Buccal cavity and pharynx	3.16
Breast	11.03
Uterus	9.35
Stomach and duodenum	21.69
Skin	2.33
Liver and biliary passages	9.10

NEVADA



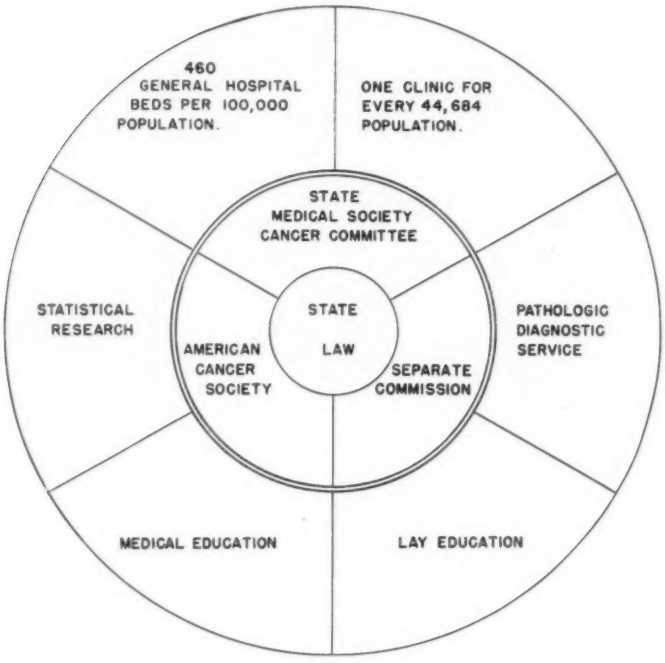
1940	
Population	110,247
Urban—percent	39.3
Rural—percent	60.7
White race—percent	94.4
Negro race—percent	0.6
Other races—percent	5.0
Median age—years	31.1
Area—square miles	110,540
Counties—number	17
Cities, towns, villages	12

Medical resources	
Physicians (1942)	174
General hospitals	18
General hospitals, over 50 beds	6
Hospitals for nervous and mental diseases	1
Tuberculosis hospitals	---
Convalescent and rest homes	---
Total cancer deaths, 1942	143

Age-adjusted, cancer-death rates per 100,000

Total cancer	81.66
Buccal cavity and pharynx	2.00
Breast	6.05
Uterus	8.40
Stomach and duodenum	19.80
Skin	2.28
Liver and biliary passages	6.79

NEW HAMPSHIRE



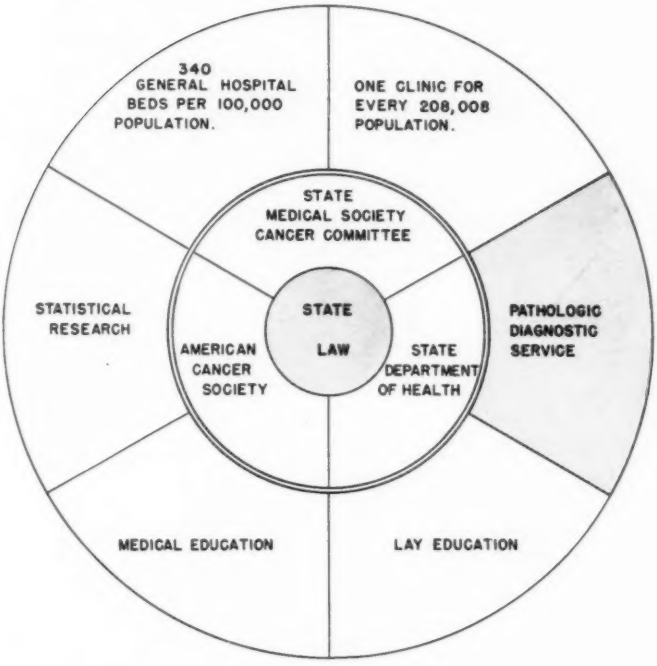
1940	
Population	491,524
Urban—percent	57.6
Rural—percent	42.4
White race—percent	99.9
Negro race—percent	0.1
Other races—percent	
Median age—years	31.6
Area—square miles	9,304
Counties—number	10
Cities, towns, villages	249

Medical resources	
Physicians (1942)	687
General hospitals	36
General hospitals, over 50 beds	22
Hospitals for nervous and mental diseases	2
Tuberculosis hospitals	2
Convalescent and rest homes	
Total cancer deaths, 1942	782

Age-adjusted, cancer-death rates per 100,000

Total cancer	107.34
Buccal cavity and pharynx	4.83
Breast	11.51
Uterus	14.23
Stomach and duodenum	16.86
Skin	1.25
Liver and biliary passages	6.95

NEW JERSEY



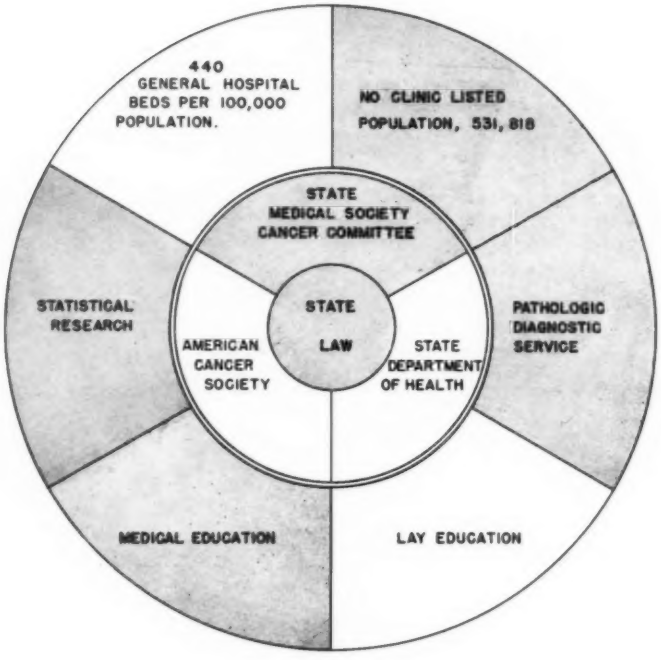
1940	
Population	4,160,165
Urban—percent	81.6
Rural—percent	18.4
White race—percent	94.5
Negro race—percent	5.5
Other races—percent	0.1
Median age—years	31.3
Area—square miles	7,836
Counties—number	21
Cities, towns, villages	333

Medical resources	
Physicians (1942)	6,008
General hospitals	94
General hospitals, over 50 beds	67
Hospitals for nervous and mental diseases	24
Tuberculosis hospitals	15
Convalescent and rest homes	6
Total cancer deaths, 1942	6,425

Age-adjusted, cancer-death rates per 100,000

Total cancer	125.94
Buccal cavity and pharynx	4.02
Breast	18.89
Uterus	11.91
Stomach and duodenum	24.40
Skin	2.01
Liver and biliary passages	7.35

NEW MEXICO



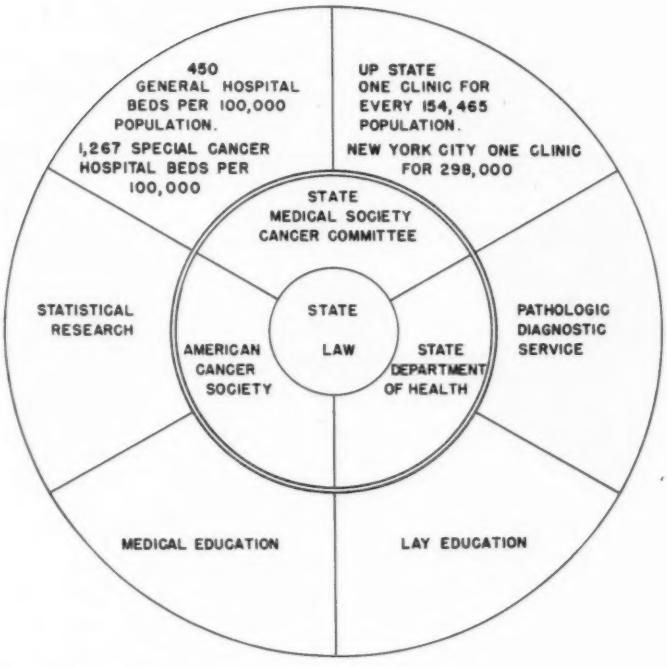
1940	
Population	531,818
Urban—percent	33.2
Rural—percent	66.8
White race—percent	92.6
Negro race—percent	0.9
Other races—percent	6.5
Median age—years	23.0
Area—square miles	121,666
Counties—number	31
Cities, towns, villages	63

Medical resources	
Physicians (1942)	447
General hospitals	51
General hospitals, over 50 beds	11
Hospitals for nervous and mental diseases	2
Tuberculosis hospitals	5
Convalescent and rest homes	1
Total cancer deaths, 1942	288

Age-adjusted, cancer-death rates per 100,000

Total cancer	71.13
Buccal cavity and pharynx	2.96
Breast	4.88
Uterus	9.74
Stomach and duodenum	19.86
Skin	2.38
Liver and biliary passages	4.58

NEW YORK



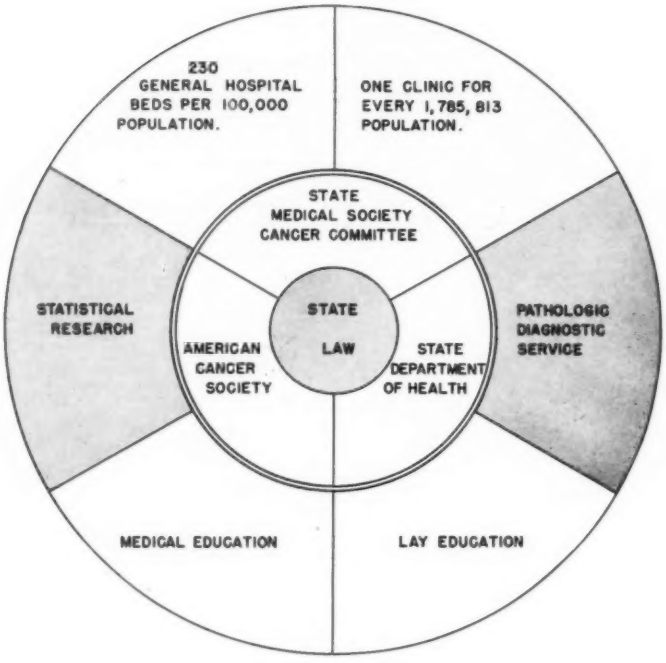
1940	
Population	13,479,142
Urban—percent	82.8
Rural—percent	17.2
White race—percent	95.6
Negro race—percent	4.2
Other races—percent	0.2
Median age—years	32.2
Area—square miles	49,576
Counties—number	62
Cities, towns, villages	610

Medical resources	
Physicians (1942)	27,928
General hospitals	345
General hospitals, over 50 beds	320
Hospitals for nervous and mental diseases	58
Tuberculosis hospitals	55
Convalescent and rest homes	18
Total cancer deaths, 1942	22,036

Age-adjusted, cancer-death rates per 100,000

Total cancer	144.61
Buccal cavity and pharynx	4.90
Breast	14.16
Uterus	11.70
Stomach and duodenum	25.94
Skin	2.45
Liver and billiary passages	8.87

NORTH CAROLINA



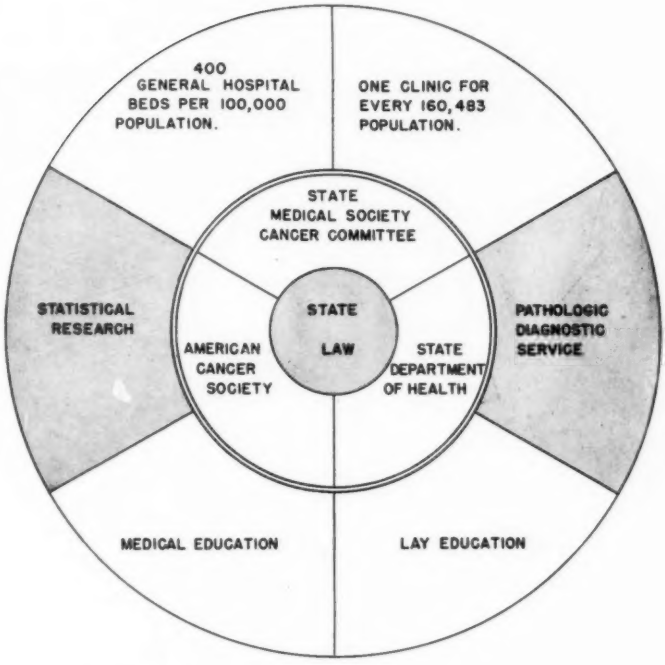
1940	
Population	3,571,623
Urban—percent	27.3
Rural—percent	72.7
White race—percent	71.9
Negro race—percent	27.5
Other races—percent	0.6
Median age—years	23.1
Area—square miles	52,712
Counties—number	100
Cities, town, villages	488

Medical resources	
Physicians (1942)	2,871
General hospitals	135
General hospitals, over 50 beds	61
Hospitals for nervous and mental diseases	9
Tuberculosis hospitals	20
Convalescent and rest homes	3
Total cancer deaths, 1942	2,249

Age-adjusted, cancer-death rates per 100,000

Total cancer	73.46
Buccal cavity and pharynx	2.31
Breast	7.10
Uterus	12.62
Stomach and duodenum	13.75
Skin	3.53
Liver and biliary passages	5.29

NORTH DAKOTA



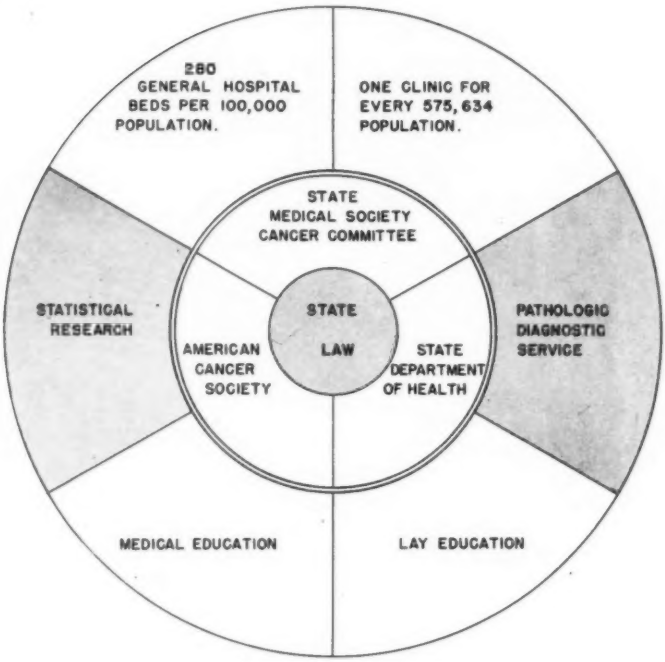
1940	
Population	641,935
Urban—percent	20.6
Rural—percent	79.4
White race—percent	98.4
Negro race—percent	----
Other races—percent	1.6
Median age—years	25.7
Area—square miles	70,665
Counties—number	53
Cities, towns, villages	333

Medical resources	
Physicians (1942)	520
General hospitals	42
General hospitals, over 50 beds	17
Hospitals for nervous and mental diseases	2
Tuberculosis hospitals	1
Convalescent and rest homes	----
Total cancer deaths, 1942	621

Age-adjusted, cancer-death rates per 100,000

Total cancer	94.37
Buccal cavity and pharynx	2.04
Breast	7.70
Uterus	6.60
Stomach and duodenum	26.65
Skin	1.66
Liver and biliary passages	7.74

OHIO



Subcommittee of Public Health Education Committee.

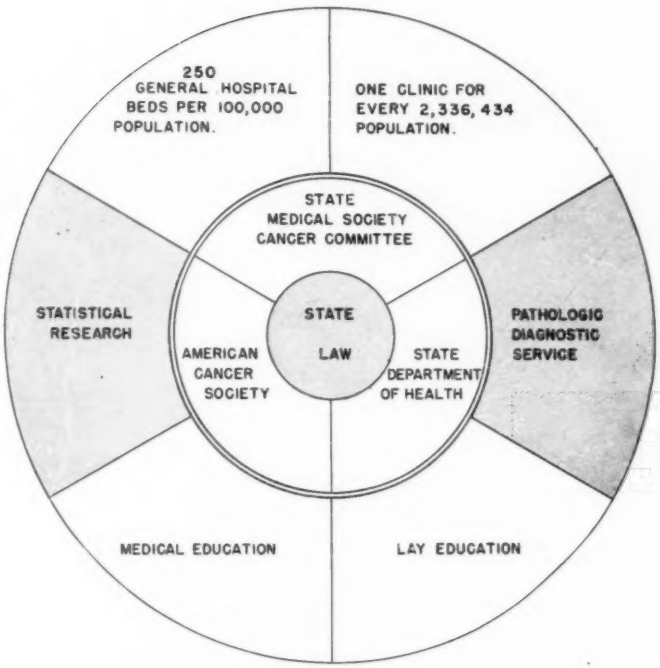
1940	
Population	6,907,612
Urban—percent	66.8
Rural—percent	33.2
White race—percent	95.1
Negro race—percent	4.9
Other races—percent	----
Median age—years	30.8
Area—square miles	41,222
Counties—number	88
Cities, towns, villages	873

Medical resources	
Physicians (1942)	9,406
General hospitals	150
General hospitals, over 50 beds	99
Hospitals for nervous and mental diseases	24
Tuberculosis hospitals	22
Convalescent and rest homes	7
Total cancer deaths, 1942	9,657

Age-adjusted, cancer-death rates per 100,000

Total cancer	113.04
Buccal cavity and pharynx	3.10
Breast	10.89
Uterus	13.30
Stomach and duodenum	20.67
Skin	2.62
Liver and biliary passages	9.88

OKLAHOMA



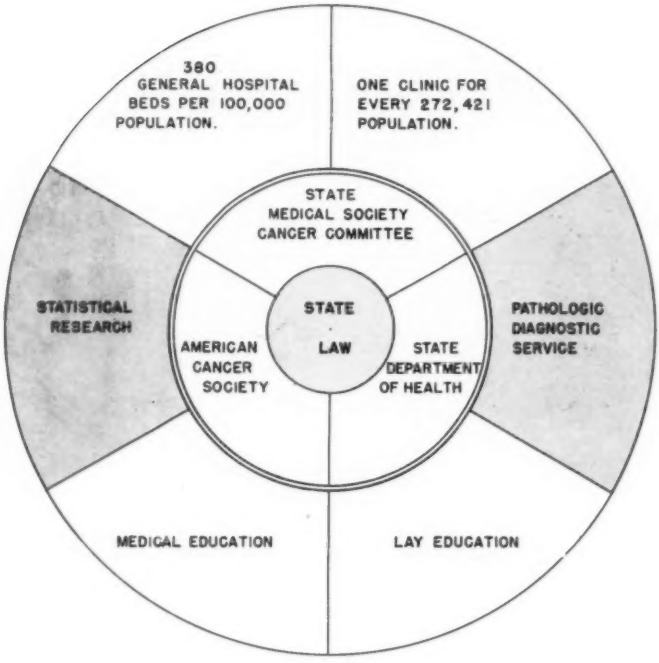
1940	
Population	2,336,434
Urban—percent	37.6
Rural—percent	62.4
White race—percent	90.1
Negro race—percent	7.2
Other races—percent	2.7
Median age—years	26.2
Area—square miles	69,619
Counties—number	77
Cities, towns, villages	519

Medical resources	
Physicians (1942)	2,284
General hospitals	120
General hospitals, over 50 beds	32
Hospitals for nervous and mental diseases	9
Tuberculosis hospitals	5
Convalescent and rest homes	-----
Total cancer deaths, 1942	1,995

Age-adjusted, cancer-death rates per 100,000

Total cancer	82.44
Buccal cavity and pharynx	3.03
Breast	7.83
Uterus	12.78
Stomach and duodenum	15.58
Skin	3.97
Liver and biliary passages	9.95

OREGON



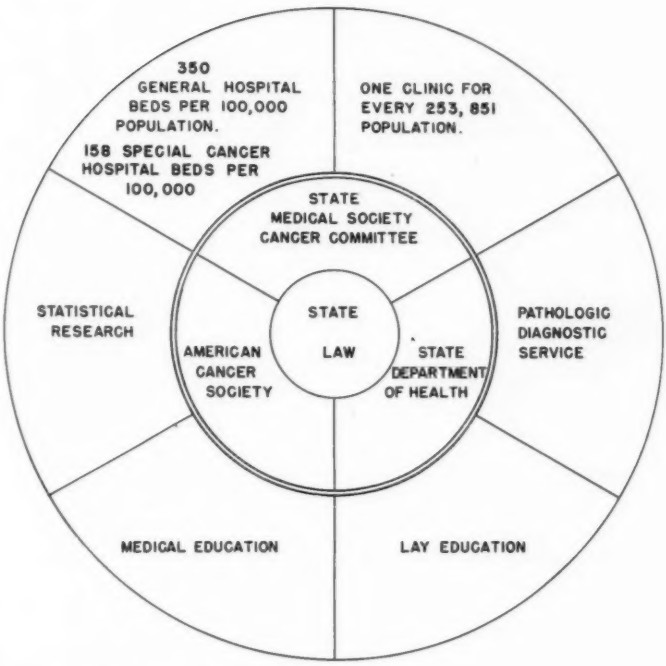
1940	
Population	1,089,684
Urban—percent	48.8
Rural—percent	51.2
White race—percent	98.7
Negro race—percent	0.2
Other races—percent	1.0
Median age—years	32.4
Area—square miles	96,981
Counties—number	36
Cities, towns, villages	207

Medical resources	
Physicians (1942)	1,493
General hospitals	62
General hospitals, over 50 beds	37
Hospitals for nervous and mental diseases	5
Tuberculosis hospitals	5
Convalescent and rest homes	1
Total cancer deaths, 1942	1,514

Age-adjusted, cancer-death rates per 100,000

Total cancer	104.19
Buccal cavity and pharynx	2.95
Breast	10.06
Uterus	10.70
Stomach and duodenum	21.31
Skin	2.19
Liver and biliary passages	7.20

PENNSYLVANIA



New program in formative period.

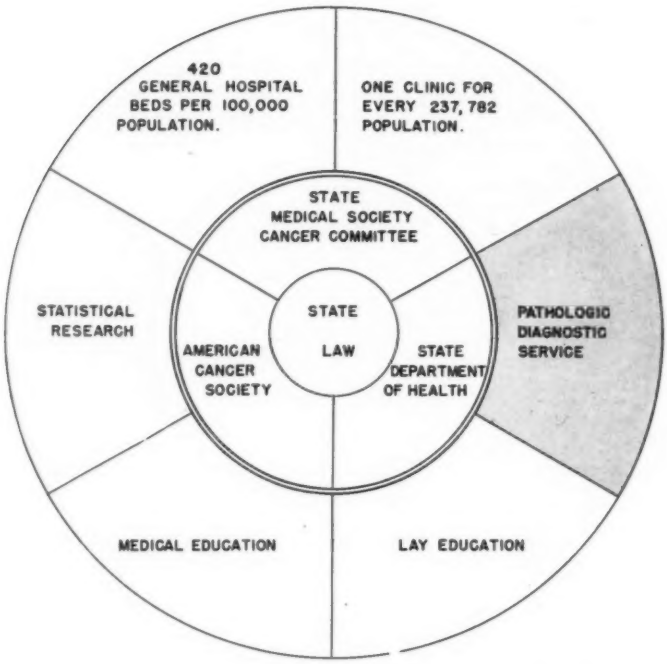
1940	
Population	9,900,180
Urban ——percent	66.5
Rural ——percent	33.5
White race——percent	95.2
Negro race——percent	4.7
Other races——percent	——
Median age——years	29.1
Area——square miles	45,333
Counties ——number	67
Cities, towns, villages	984

Medical resources	
Physicians (1942)	13,503
General hospitals	231
General hospitals, over 50 beds	180
Hospitals for nervous and mental diseases	44
Tuberculosis hospitals	16
Convalescent and rest homes	11
Total cancer deaths, 1942	13,512

Age-adjusted, cancer-death rates per 100,000

Total cancer	119.52
Buccal cavity and pharynx	4.18
Breast	11.29
Uterus	12.88
Stomach and duodenum	23.10
Skin	2.38
Liver and biliary passages	8.52

RHODE ISLAND



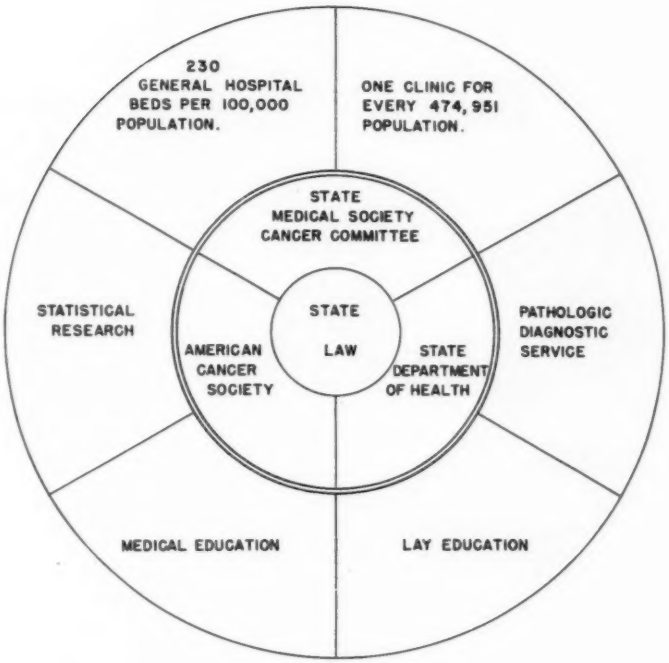
1940	
Population	713,346
Urban—percent	91.6
Rural—percent	8.4
White race—percent	98.4
Negro race—percent	1.5
Other races—percent	0.1
Median age—years	30.7
Area—square miles	1,214
Counties—number	5
Cities, towns, villages	32

Medical resources	
Physicians (1942)	958
General hospitals	14
General hospitals, over 50 beds	10
Hospitals for nervous and mental diseases	4
Tuberculosis hospitals	2
Convalescent and rest homes	2
Total cancer deaths, 1942	1,111

Age-adjusted, cancer-death rates per 100,000

Total cancer	138.43
Buccal cavity and pharynx	6.25
Breast	13.73
Uterus	12.32
Stomach and duodenum	24.99
Skin	1.98
Liver and biliary passages	8.92

SOUTH CAROLINA



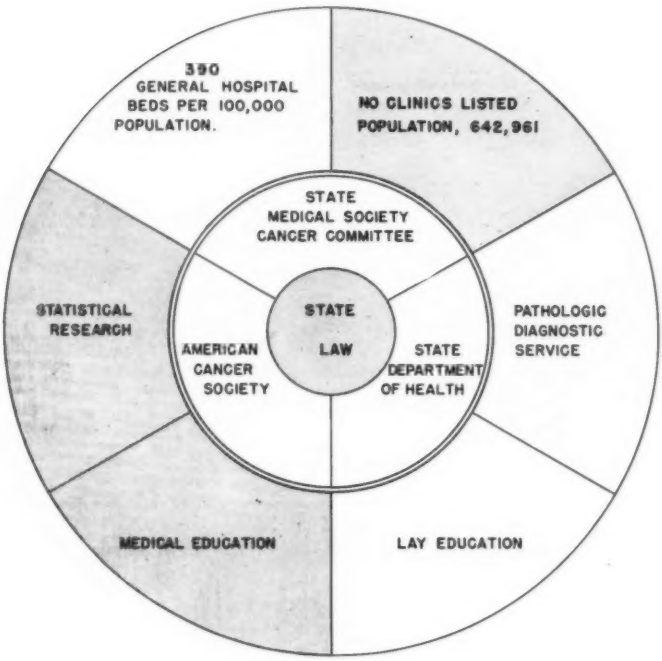
1940	
Population	1,899,804
Urban—percent	24.5
Rural—percent	75.5
White race—percent	57.1
Negro race—percent	42.9
Other races—percent	0.1
Median age—years	22.2
Area—square miles	31,055
Counties—number	46
Cities, towns, villages	248

Medical resources	
Physicians (1942)	1,427
General hospitals	63
General hospitals, over 50 beds	36
Hospitals for nervous and mental diseases	3
Tuberculosis hospitals	5
Convalescent and rest homes	-----
Total cancer deaths, 1942	1,179

Age-adjusted, cancer-death rates per 100,000

Total cancer	72.56
Buccal cavity and pharynx	2.79
Breast	6.52
Uterus	15.26
Stomach and duodenum	12.44
Skin	2.68
Liver and biliary passages	5.93

SOUTH DAKOTA



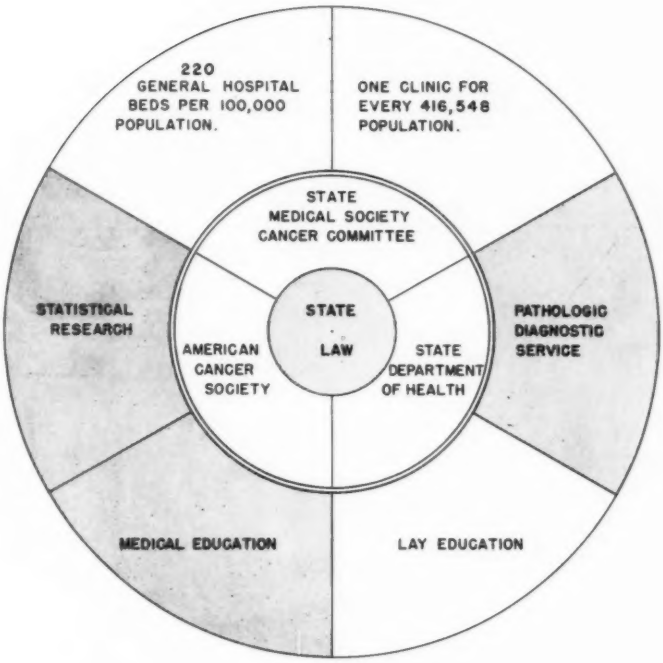
1940	
Population	642,961
Urban—percent	24.6
Rural—percent	75.4
White race—percent	96.3
Negro race—percent	0.1
Other races—percent	3.6
Median age—years	27.4
Area—square miles	77,047
Counties—number	69
Cities, towns, villages	303

Medical resources	
Physicians (1942)	493
General hospitals	50
General hospitals, over 50 beds	16
Hospitals for nervous and mental diseases	2
Tuberculosis hospitals	2
Convalescent and rest homes	1
Total cancer deaths, 1942	686

Age-adjusted, cancer-death rates per 100,000

Total cancer	93.06
Buccal cavity and pharynx	3.12
Breast	9.14
Uterus	8.64
Stomach and duodenum	22.33
Skin	1.73
Liver and biliary passages	6.11

TENNESSEE



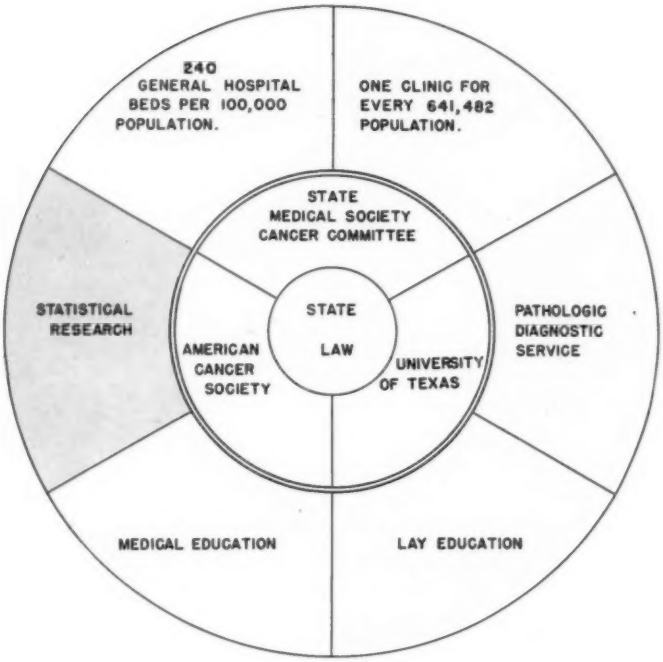
1940	
Population	2,915,841
Urban—percent	35.2
Rural—percent	64.8
White race—percent	82.5
Negro race—percent	17.4
Other races—percent	----
Median age—years	25.8
Area—square miles	42,246
Counties—number	95
Cities, towns, villages	221

Medical resources	
Physicians (1942)	2,961
General hospitals	86
General hospitals, over 50 beds	23
Hospitals for nervous and mental diseases	10
Tuberculosis hospitals	7
Convalescent and rest homes	-----
Total cancer deaths, 1942	2,315

Age-adjusted, cancer-death rates per 100,000

Total cancer	76.87
Buccal cavity and pharynx	3.20
Breast	7.26
Uterus	12.40
Stomach and duodenum	13.02
Skin	3.31
Liver and biliary passages	6.76

TEXAS



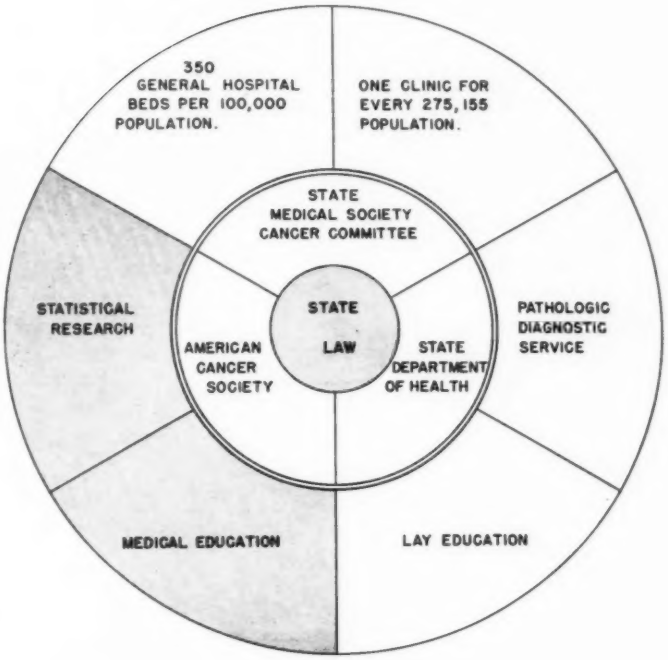
1940	
Population	6,414,824
Urban—percent	45.4
Rural—percent	54.6
White race—percent	85.5
Negro race—percent	14.4
Other races—percent	----
Median age—years	26.8
Area—square miles	267,339
Counties—number	254
Cities, towns, villages	647

Medical resources	
Physicians (1942)	6,952
General hospitals	354
General hospitals, over 50 beds	84
Hospitals for nervous and mental diseases	17
Tuberculosis hospitals	15
Convalescent and rest homes	1
Total cancer deaths, 1942	5,487

Age-adjusted, cancer-death rates per 100,000

Total cancer	88.36
Buccal cavity and pharynx	3.74
Breast	7.26
Uterus	12.09
Stomach and duodenum	16.80
Skin	4.56
Liver and biliary passages	7.31

UTAH



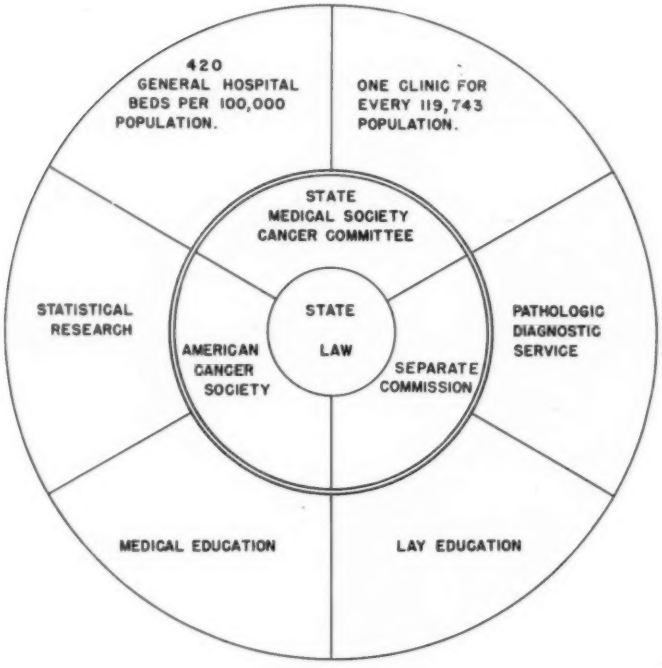
1940	
Population	550,310
Urban—percent	55.5
Rural—percent	44.5
White race—percent	98.7
Negro race—percent	0.2
Other races—percent	1.1
Median age—years	24.3
Area—square miles	84,916
Counties—number	29
Cities, towns, villages	192

Medical resources	
Physicians (1942)	585
General hospitals	33
General hospitals, over 50 beds	10
Hospitals for nervous and mental diseases	2
Tuberculosis hospitals	1
Convalescent and rest homes	---
Total cancer deaths, 1942	508

Age-adjusted, cancer-death rates per 100,000

Total cancer	106.19
Buccal cavity and pharynx	1.97
Breast	11.21
Uterus	9.95
Stomach and duodenum	24.70
Skin	2.58
Liver and biliary passages	6.91

VERMONT



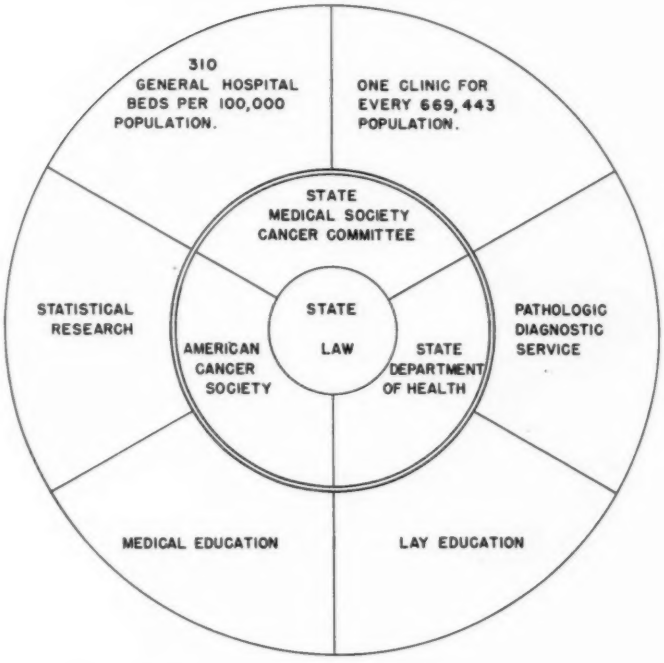
1940	
Population	359,231
Urban—percent	34.3
Rural—percent	65.7
White race—percent	99.9
Negro race—percent	0.1
Other races	
Median age—years	29.9
Area—square miles	9,609
Counties—number	14
Cities, towns, villages	75

Medical resources	
Physicians (1942)	551
General hospitals	22
General hospitals, over 50 beds	11
Hospitals for nervous and mental diseases	4
Tuberculosis hospitals	3
Convalescent and rest homes	
Total cancer deaths, 1942	529

Age-adjusted, cancer-death rates per 100,000

Total cancer	104.45
Buccal cavity and pharynx	4.26
Breast	11.06
Uterus	13.30
Stomach and duodenum	15.89
Skin	2.11
Liver and biliary passages	7.71

VIRGINIA



New program in formation.

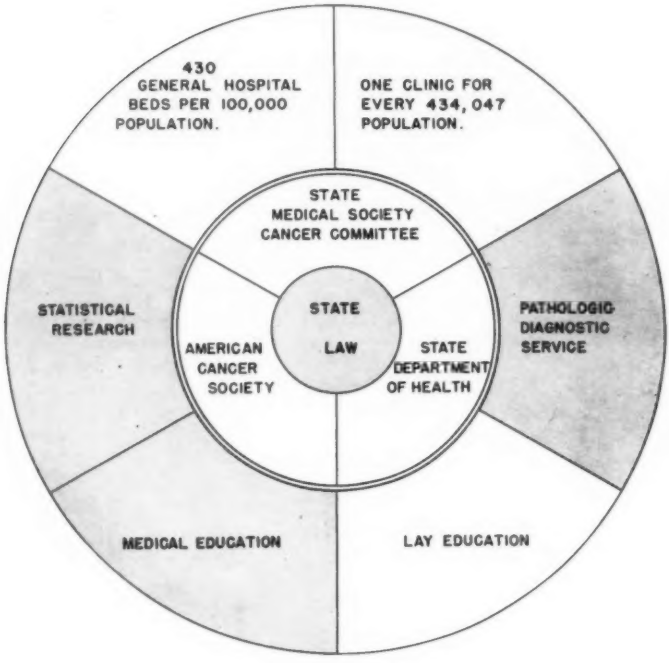
1940	
Population	2,677,773
Urban—percent	35.3
Rural—percent	64.7
White race—percent	75.3
Negro race—percent	24.7
Other races—percent	----
Median age—years	25.8
Area—square miles	40,815
Counties—number	100
Cities, towns, villages	217

Medical resources	
Physicians (1942)	2,920
General hospitals	94
General hospitals, over 50 beds	49
Hospitals for nervous and mental diseases	11
Tuberculosis hospitals	7
Convalescent and rest homes	-----
Total cancer deaths, 1942	2,400

Age-adjusted, cancer-death rates per 100,000

Total cancer	84.70
Buccal cavity and pharynx	2.43
Breast	8.65
Uterus	12.20
Stomach and duodenum	15.83
Skin	2.76
Liver and biliary passages	7.13

WASHINGTON



1940	
Population	1,736,191
Urban—percent	53.1
Rural—percent	46.9
White race—percent	97.8
Negro race—percent	0.4
Other races—percent	1.8
Median age—years	32.2
Area—square miles	68,192
Counties—number	39
Cities, towns, villages	222

Medical resources	
Physicians (1942)	2,234
General hospitals	99
General hospitals, over 50 beds	40
Hospitals for nervous and mental diseases	8
Tuberculosis hospitals	10
Convalescent and rest homes	2
Total cancer deaths, 1942	2,523

Age-adjusted, cancer-death rates per 100,000

Total cancer	114.31
Buccal cavity and pharynx	3.26
Breast	11.28
Uterus	12.08
Stomach and duodenum	25.30
Skin	2.29
Liver and biliary passages	8.02

WEST VIRGINIA

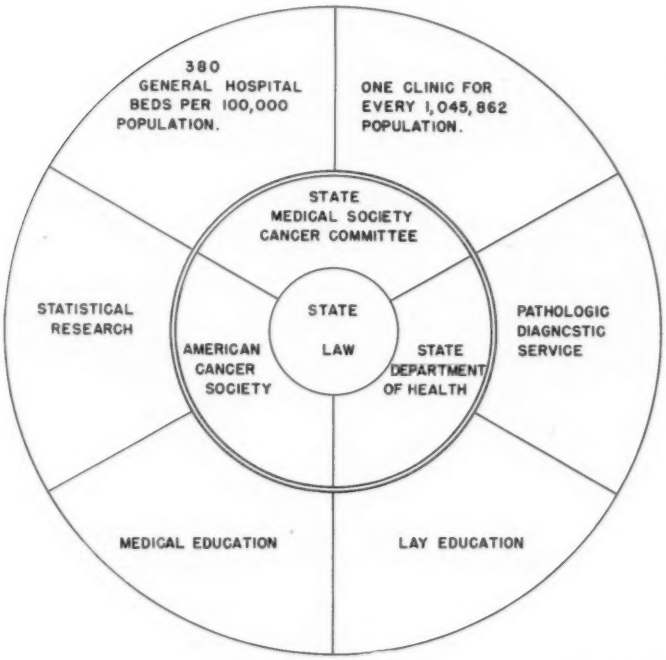
1940	
Population	1,901,970
Urban—percent	28.1
Rural—percent	71.9
White race—percent	93.8
Negro race—percent	6.2
Other races—percent	
Median age—years	24.3
Area—square miles	24,181
Counties—number	55
Cities, towns, villages	207

Medical resources	
Physicians (1942)	1,834
General hospitals	62
General hospitals, over 50 beds	43
Hospitals for nervous and mental diseases	6
Tuberculosis hospitals	6
Convalescent and rest homes	1
Total cancer deaths, 1942	1,542

Age-adjusted, cancer-death rates per 100,000

Total cancer	89.75
Buccal cavity and pharynx	2.75
Breast	7.92
Uterus	13.11
Stomach and duodenum	18.98
Skin	2.72
Liver and biliary passages	9.20

WISCONSIN



1945 legislature appropriated $25,000 for a cancer program in the State. The appropriation was made to the Board of Regents of the University of Wisconsin "for the study of and research into the causes, prevention, and cure of cancer, and for the purpose of carrying on such study and research." This continues work for which the State recently appropriated $15,000. Cancer program is in formative period.

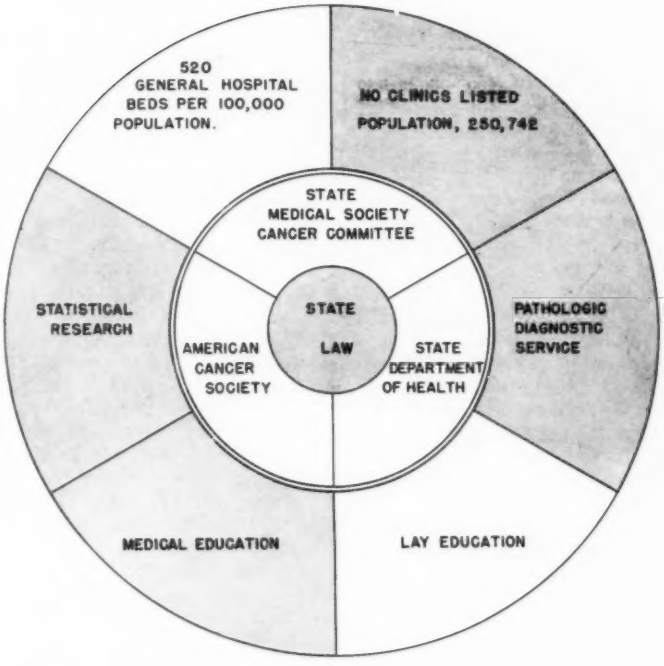
1940	
Population	3,137,587
Urban—percent	53.5
Rural—percent	46.5
White race—percent	99.2
Negro race—percent	0.4
Other races—percent	0.4
Median age—years	29.8
Area—square miles	56,154
Counties—number	71
Cities, towns, villages	513

Medical resources	
Physicians (1942)	3,551
General hospitals	140
General hospitals, over 50 beds	88
Hospitals for nervous and mental diseases	49
Tuberculosis hospitals	21
Convalescent and rest homes	1
Total cancer deaths, 1942	4,145

Age-adjusted, cancer-death rates per 100,000

Total cancer	120.31	Stomach and duodenum	28.18
Buccal cavity and pharynx	3.65	Skin	2.54
Breast	11.81	Liver and biliary passages	8.07
Uterus	10.03		

WYOMING



1940	
Population	250,742
Urban—percent	37.3
Rural—percent	62.7
White race—percent	98.3
Negro race—percent	0.4
Other races—percent	1.3
Median age—years	27.6
Area—square miles	97,914
Counties—number	23
Cities, towns, villages	88

Medical resources	
Physicians (1942)	263
General hospitals	24
General hospitals, over 50 beds	5
Hospitals for nervous and mental diseases	3
Tuberculosis hospitals	1
Convalescent and rest homes	---
Total cancer deaths, 1942	206

Age-adjusted, cancer-death rates per 100,000

Total cancer	91.61
Buccal cavity and pharynx	2.69
Breast	9.43
Uterus	12.62
Stomach and duodenum	18.81
Skin	1.95
Liver and biliary passages	7.80

PART IV. SUMMARY AND RECOMMENDATIONS

(1) From replies received from 55 medical schools to letters inquiring as to the teaching of cancer and from other data considered, the Committee is of the opinion that there is need for medical schools to give more comprehensive and better integrated courses in cancer.

(2) A survey of the present facilities for postgraduate training in the field of cancer shows an abundance of clinical material and adequate equipment in many medical schools and hospitals, in which there is personnel interested in postgraduate training of physicians in cancer pathology, cancer surgery, and cancer radiology. However, the number of centers prepared to give postgraduate training in cancer is not believed to be adequate to fill the need for specially trained personnel in this field of medicine, and efforts should be made to develop such training at additional medical centers. This is important because of the long period required for training and the fact that only a few physicians can be taken for training at any one institution at any one time. The content of postgraduate courses in cancer should be carefully planned. Special attention should be given to training in the medical supervision of the advanced cancer case.

(3) In addition to long-term courses in cancer, short courses of various kinds and other types of cancer-education activities for practicing physicians have been conducted in a number of communities. These activities should be continued and expanded.

(4) The traineeships given by the National Cancer Institute have proved to be one of the most effective ways of increasing the number of physicians with special training in cancer. This activity should be continued and expanded through the development of a larger number of training centers and an increase in the number of traineeships.

(5) Although the method of effecting a complete cancer service within a State will vary with local conditions, the basic elements of a cancer program are constant. They include statistical research, educational activities for the public generally and for physicians, nurses, and dentists; the provision of cancer-prevention clinics, tissue diagnostic services, diagnostic and treatment clinics, an adequate number of hospital beds, institutional facilities for care of the advanced cancer patient wishing such care, and adequate medical and nursing services for persons with advanced cancer who wish to remain in their own homes.

(6) The co-operation of all agencies engaged in cancer-control activities is necessary in order to provide a complete cancer service in a State. Leadership in organizing and carrying on a State cancer program logically falls upon the State health department unless a State legislature has placed this responsibility with some other agency. The State health department or other designated State cancer agency may properly stimulate any activities necessary to provide a complete State cancer program.

(7) The National Cancer Institute, in the United States Public Health Service, was created by the Congress to carry on and to promote among other agencies cancer research and cancer-control activities. Cancer is now the second highest cause of death in the United States and is likely to increase with the lengthening span of life.

Greater efforts should be made in the field of cancer research and to increase the use of available knowledge in controlling this disease. It is gratifying to note that the Congress has recognized this need by removing the limitation on the amount of money that can be appropriated to the National Cancer Institute. In order that more adequate cancer facilities and services may be developed in the United States the committee makes the following additional recommendations:

(8) That a conference of representatives responsible for the planning of cancer courses in the curriculum of

schools of medicine be called with a view to developing improved methods of teaching cancer.

(9) That the National Cancer Institute expand the work of training physicians in the diagnosis and treatment of cancer, and that it assist medical schools and other appropriate institutions in developing both long- and short-term postgraduate courses in cancer.

(10) That the National Cancer Institute give aid in providing the physical facilities, scientific equipment, and, if necessary, the training of personnel in a few cancer centers strategically located from a geographical point of view and associated with one or more medical centers. If existing legislation does not give the authority to do this, additional legislation should be sought promptly. From the experience gained in these several demonstration centers, it should be possible to develop a plan applicable to the whole country to insure that cancer patients receive the best that medical science has to offer in the way of diagnosis and treatment. The availability of treatment in these centers should not be denied to anyone because of inability to pay.

(11) That the National Cancer Institute be prepared to assist State health departments and other agencies in the development of State cancer programs which will embody the facilities and services outlined in this report. In this connection, the work of the American College of Surgeons in stimulating the organization of approved cancer diagnostic and treatment clinics is of great importance in achieving the goal of 1 such clinic for every 50,000 persons and should be encouraged and assisted.

(12) That in order to hasten the development of more effective means of preventing, diagnosing, and treating cancer, the National Cancer Institute expand its program of research including the training of research fellows and the program of grants to aid research in other institutions.

(13) That close co-operation be maintained between the National Cancer Institute and voluntary agencies in the further development and conduct of cancer-control activities in the United States.

(14) That the National Cancer Institute request appropriations sufficient to enable it to carry out the foregoing recommendations.

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